

SMART^r

CABLE MANAGEMENT SYSTEMS



CABLE TRUNKING

CABLE LADDER

CABLE TRAY

FITTINGS

DFMA DESIGN



SMART^r

Your Trusted Partner in
Electrical & Mechanical Support

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MATERIAL	MATERIAL SPECIFICATION	ADVANTAGES
Steel	ASTM JIAS BS EN ISO	(a) Electrical Shielding (b) Finish options (c) Low Thermal Expansion
Stainless Steel	AISI Type 304 or 316	(a) Superior Corrosion Resistance (b) Withstands High Temperatures

FINISHING	SPECIFICATION	RECOMMENDED USE
Electrogalvanized Steel	BS1449 Part 3 (Hardware & Accessories)	Indoor
Pre-Galvanized Zinc	ASTM A52 G90	Indoor
Hot Dip Galvanised (HDG)	ASTM A123, BS: EN:ISO 1461 (1999), BS 729	Indoor/Outdoor
Stainless Steel 316, 304	ASTM 240, BS EN 10088	Outdoor Chemical Environments
Special Paint coating	Per Customer specification	Indoor/Semi outdoor
Epoxy Coated	SS249	Indoor

Zinc Coatings

Zinc protects steel in two ways, it protects the steel as a coating and as a sacrificial anode to repair bare areas such as cut edges, scratches, and gauges. The corrosion protection of zinc is directly related to its thickness and the environment. This means a 0.2 mil coating will last twice if a 0.1 mil coating in the same environment.

Electrogalvanized Steel

Electrogalvanized steel (Also known as steel plated or electroplated) is the process by which a coating of steel is deposited by electrolysis from a bath of steel.

The coating is pure and metallurgically bonded. A maximum of 0.5 mil of steel can be applied by this method.

This film is a barrier coating which slows subsequent corrosive attacks. This coating is usually recommended for indoor use in relatively dry areas.

Pre-galvanized zinc

Pre-galvanized steel is produced by coating coils of sheet steel with zinc at the mills. This is also known as mill galvanized or hot dip mill galvanized. These coils are then slit to size and fabricated by roll forming, shearing, punching, or forming to produce pre-galvanized cable containment products.

During fabrication cut edges and welded areas are not normally zinc coated. However, the zinc near the uncoated metal becomes a sacrificial anode to protect the bare areas after a short period of time.

Pre-galvanized steel is not used outdoors but suitable for extended exposure in dry or mildly corrosive atmospheres.

Hot Dip Galvanized After Fabrication

Hot Dip Galvanized cable containment are fabricated from steel and then completely immersed in a bath of molten zinc. A metallic bond occurs resulting in a zinc coating that completely coats all surface, including edges and welds.

SMARTr Trunking Tested Under:

(a) SS 249: 1981

(b) BS EN 50085

Item code

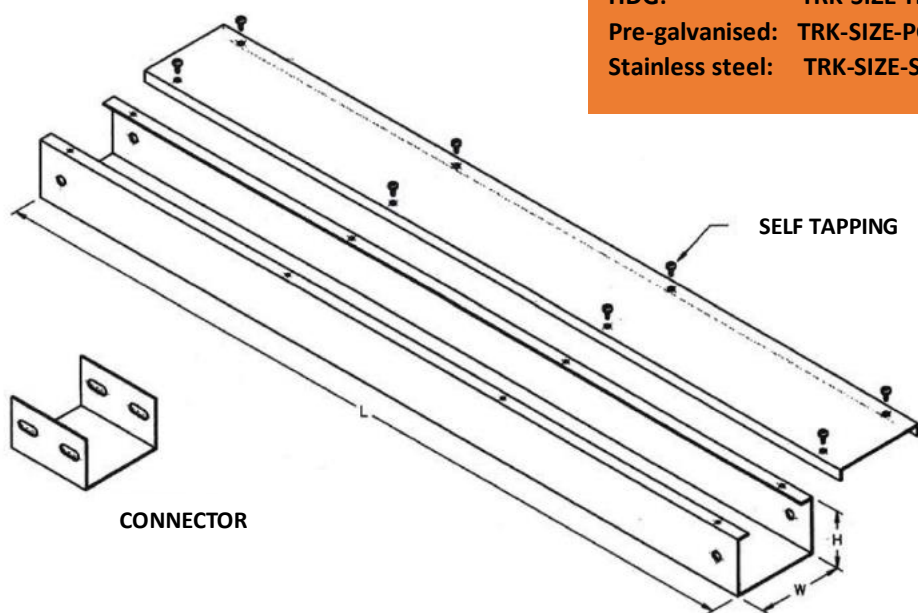
SS249: TRK-SIZE-ST-COLOR

Epoxy: TRK-SIZE-COLOUR

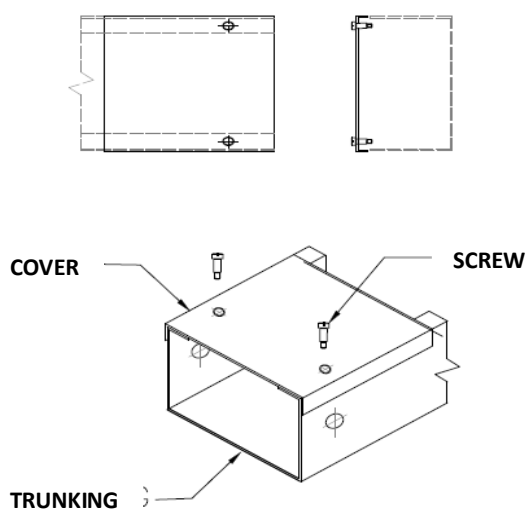
HDG: TRK-SIZE-HDG

Pre-galvanised: TRK-SIZE-PG

Stainless steel: TRK-SIZE-SS316/304



Material	Standards	Finishing
Pre-Galvanised Steel	BS 2989: 1982	Original
Hot Roll Steel	JISG 3131 SPHC & HDG to BS729: 1971 or ASTM A123	HDG
Mild Steel	JISG 3131 SPHC	HDG
Electrogalvanized	JISG 3131 SPHC	Epoxy coated
Stainless Steel	AISI 304, 316 & 316L	Original



Product Standard List			
Width (W)	Height (H)	Length (L)	Thickness
50	25-50	2440-3000	0.8 -1.5
75	50-75	2440-3000	0.8 -1.5
100	50-100	2440-3000	0.8 -1.5
150	50-100	2440-3000	0.8 -1.5
200	100	2440-3000	1.0 – 1.5
250	100	2440-3000	1.0 – 1.5
300	100	2440-3000	1.0 – 1.5
450	100	2440-3000	1.5 – 2.0
600	100	2440-3000	1.5 – 2.0
700	100	2440-3000	1.5 – 2.0
All dimension is in mm & other sizes available on request			

SMARTr Trunking Tested Under:

(a) SS 249:1981

(b) BS EN 50085

Item code

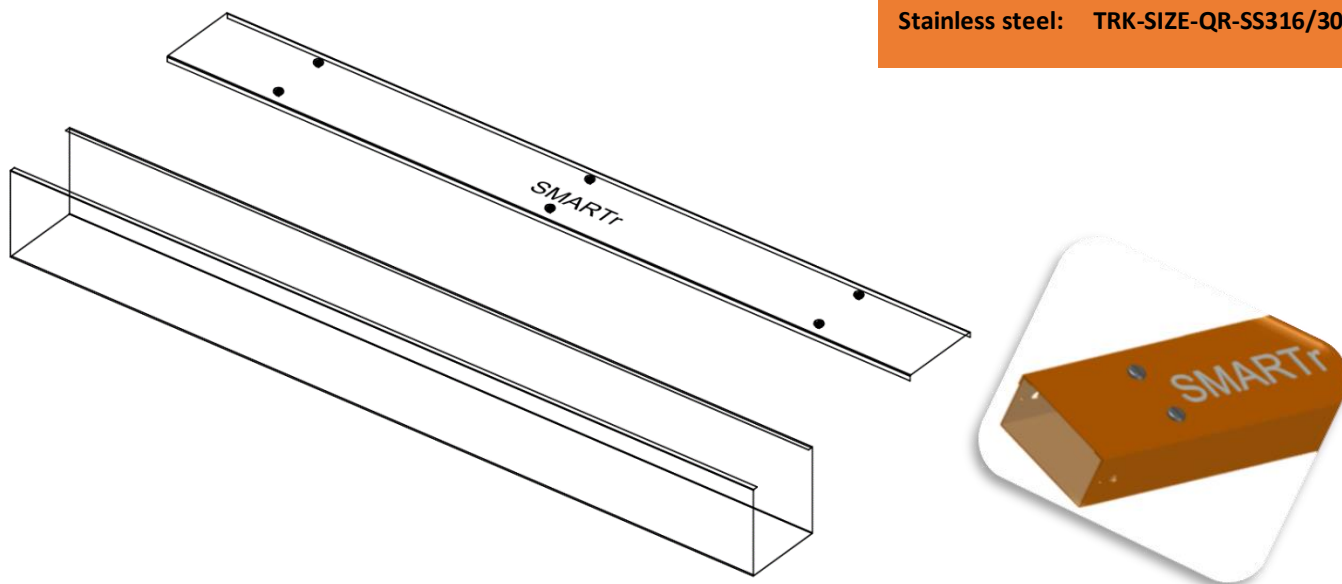
SS249: TRK-SIZE-QR-ST-COLOR

Epoxy: TRK-SIZE-QR-COLOUR

HDG: TRK-SIZE-QR-HDG

Pre-galvanised: TRK-SIZE-QR-PG

Stainless steel: TRK-SIZE-QR-SS316/304



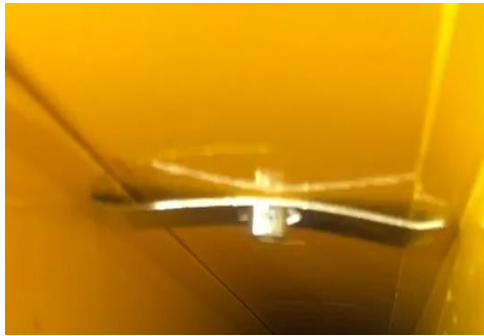
Type (1)

Type (2)

Material	Standards	Finishing
Pre-Galvanised Steel	BS 2989: 1982	Original
Hot Roll Steel	JISG 3131 SPHC & HDG to BS729: 1971 or ASTM A123	HDG
Mild Steel	JISG 3131 SPHC	HDG
Electrogalvanized	JISG 3131 SPHC	Epoxy coated
Stainless Steel	AISI 304, 316 & 316L	Original

Product Standard List			
Width (W)	Height (H)	Length (L)	Thickness
50	25-50	2440-3000	0.8 -1.5
75	50-75	2440-3000	0.8 -1.5
100	50-100	2440-3000	0.8 -1.5
150	50-100	2440-3000	0.8 -1.5
200	100	2440-3000	1.0 – 1.5
250	100	2440-3000	1.0 – 1.5
300	100	2440-3000	1.0 – 1.5
450	100	2440-3000	1.5 – 2.0
600	100	2440-3000	1.5 – 2.0
700	100	2440-3000	1.5 – 2.0
All dimension is in mm & other sizes available on request			

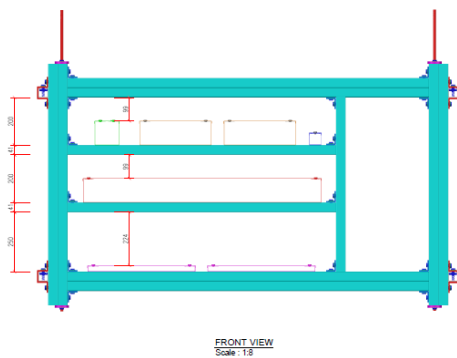
SMARTr DFMA friendly Quick Release Turn Buckle Trunking



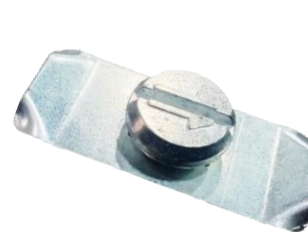
Attached turn buckle with the cover.



Tight fit.



Quick Release turn buckle type trunking are most suitable for DFMA type installation due to tight space constrain.



(a)



(b)

Turn buckle should be manufactured from alloy which is maintenance free & will not deform in fire hazard. (b) Made of plastic (Not Recommended).



Alloy Turn Buckle will not rust, unlike normal steel screws.

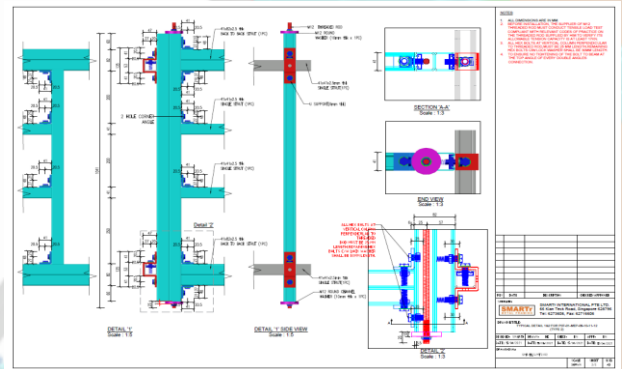


Steel screw installations are prone to workers not fully tightening & missing screws over period the installation looks very untidy

NO	DESCRIPTION	QUICK RELEASE (TURN BUCKLE)	SCREW
1	Material	Zinc Alloy	Mild steel
2	Design	Compact, fire resistance & Easy	Difficult & Time consuming
3	Properties	Durable, cost efficient, corrosion resistant & rust proof	Easy to get rust even with electroplating
4	Process	Casting	Cold forging
5	Installation	Fast & easy	Time consuming

SMARTr Specializes in DFMA design to meet customer requirements.

(a) We provide detail modular drawings in 3D and 2D format.



(b) We provide pre-cut HDG strut as per the modular required lengths.

Special note: All cut edges are fully Hot dipped Galvanised without the need to touch up.



(c) Example of an Off-site installation of DFMA modular.

(d) Providing PE (Professional Engineer) to calculate the DFMA load and other calculation.

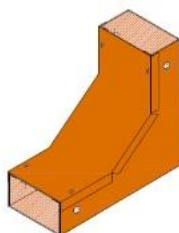
Calculation Sheet	Calculation Sheet	Calculation Sheet
Client: [Name] Project: [Name] Location: [Location] Design: [Design] Drawn: [Name] Checked: [Name] Approved: [Name] Date: [Date] Scale: [Scale] Version: [Version] Revision: [Revision] Notes: [Notes] Calculation: [Calculation] Result: [Result]	Client: [Name] Project: [Name] Location: [Location] Design: [Design] Drawn: [Name] Checked: [Name] Approved: [Name] Date: [Date] Scale: [Scale] Version: [Version] Revision: [Revision] Notes: [Notes] Calculation: [Calculation] Result: [Result]	Client: [Name] Project: [Name] Location: [Location] Design: [Design] Drawn: [Name] Checked: [Name] Approved: [Name] Date: [Date] Scale: [Scale] Version: [Version] Revision: [Revision] Notes: [Notes] Calculation: [Calculation] Result: [Result]

CABLE TRUNKING FITTINGS

In the interest of continuous improvements, SMART International Pte Ltd reserves the right without prior notice to alter the design and specification of their product.



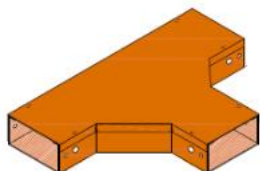
90 Deg Horizontal Flat Elbow



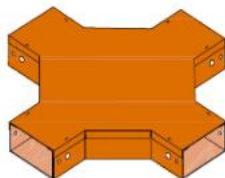
90 Deg Vertical Inside Riser



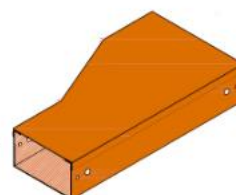
90 Deg Vertical Outside Riser



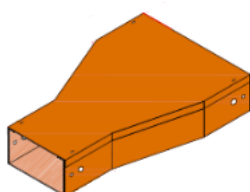
90 Deg Horizontal Tee



90 Deg Horizontal Cross



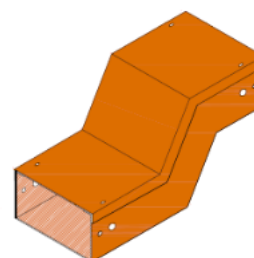
Left Hand Reducer



Straight Reducer



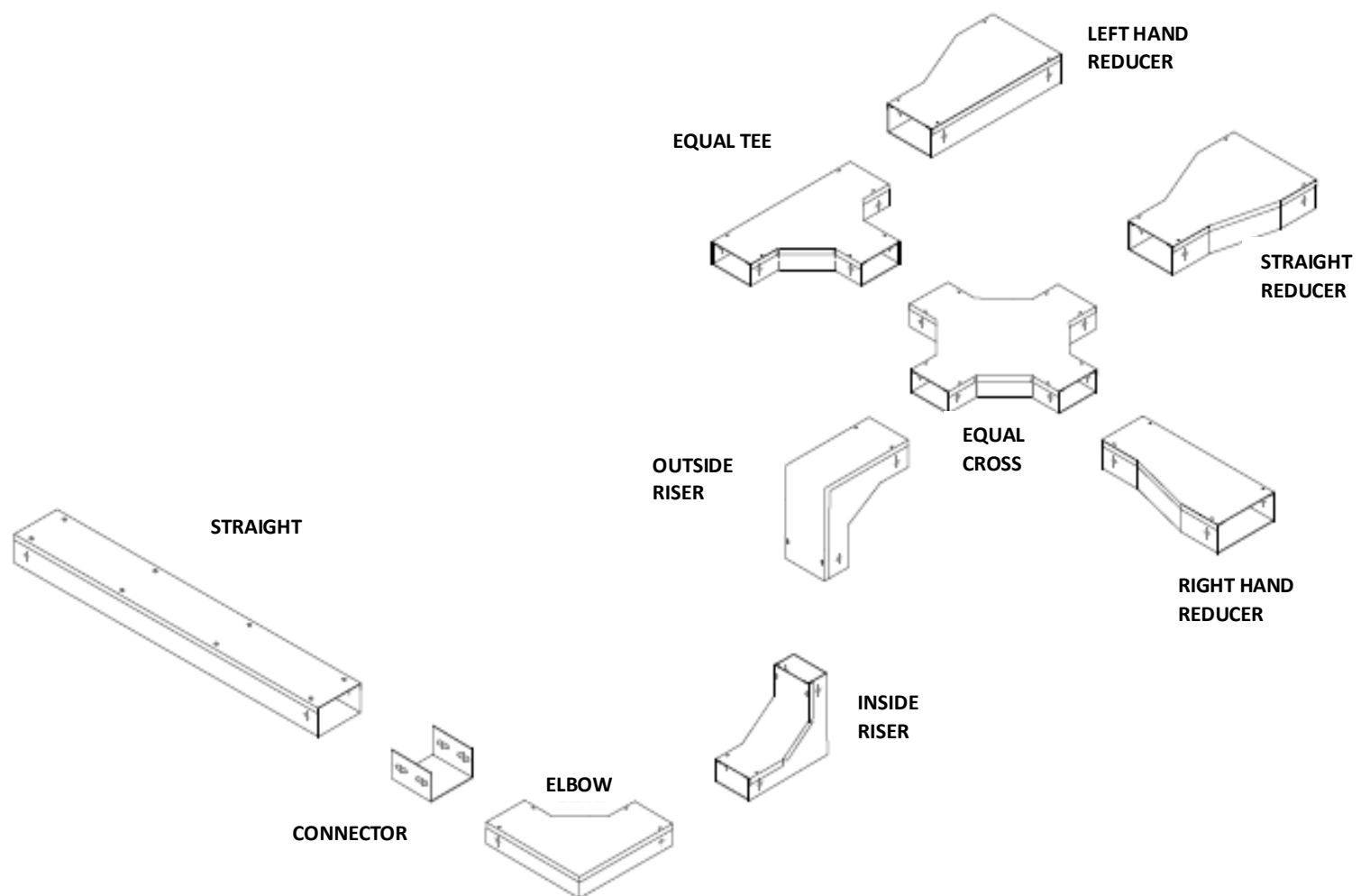
Special Tee



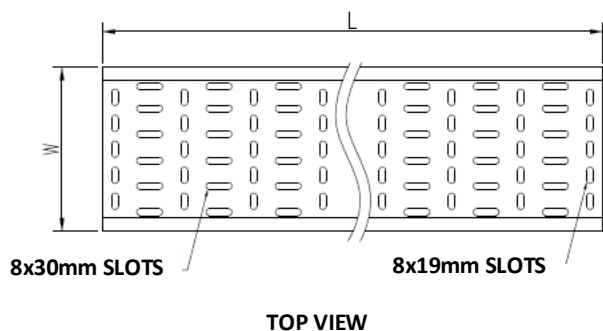
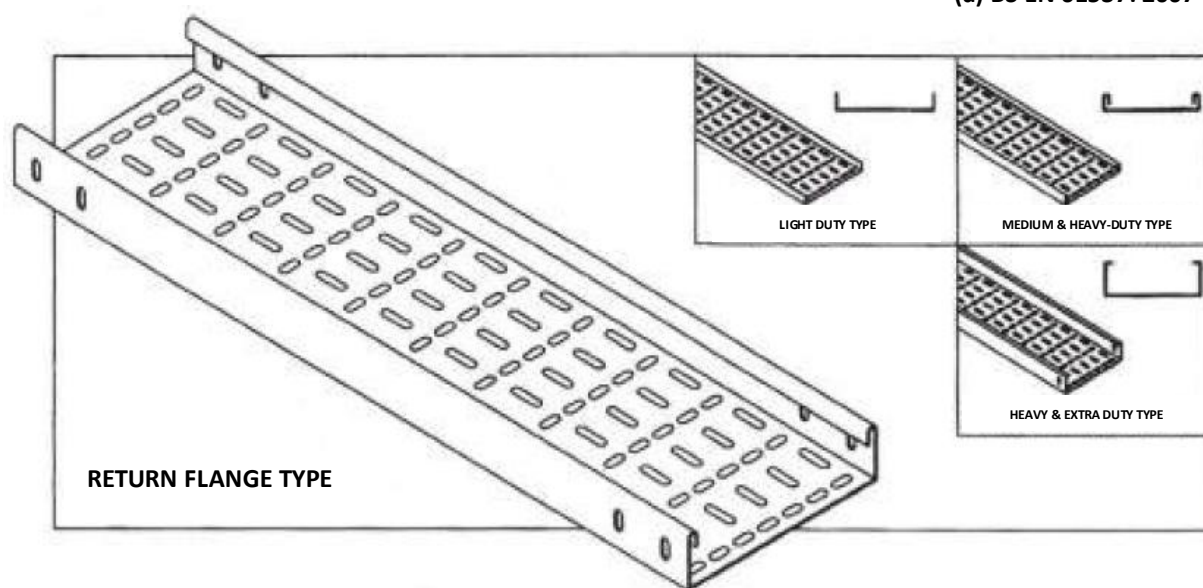
Vertical Offset

All fittings available in screw type & quick release turn buckle type

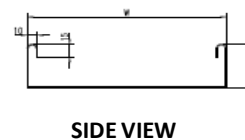
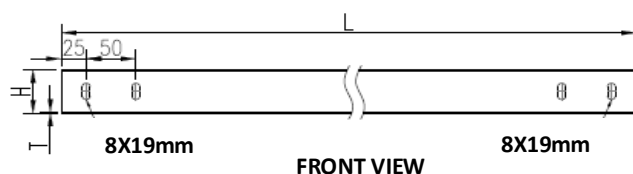
Typical Cable Trunking Fitting Installation



SMARTr Tray Tested Under:
(a) BS EN 61537: 2007



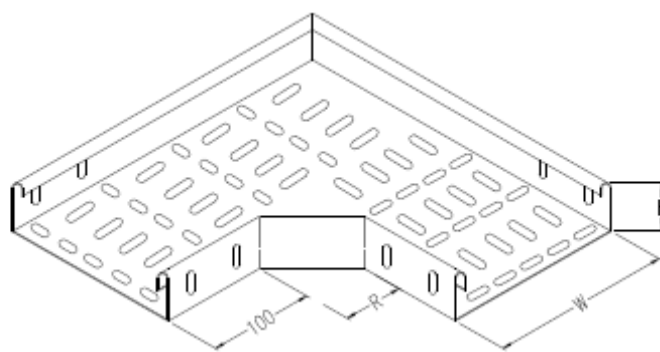
Material	Standards	Finishing
Pre-Galvanised Steel	BS 2989: 1982	Original
Hot Roll Steel	JISG 3131 SPHC & HDG to BS729: 1971 or ASTM A123	HDG
Mild Steel	JISG 3131 SPHC	HDG
Stainless Steel	AISI 304, 316 or 316L	Original



Light Duty			
Width (W)	Height (H)	Length (L)	Thickness
150	25	2440-3000	1.0-2.0
300	25	2440-3000	1.0-2.0
450	25	2440-3000	1.0-2.0
600	25	2440-3000	1.0-2.0
750	25	2440-3000	1.0-2.0
900	25	2440-3000	1.0-2.0
1000	25	2440-3000	1.0-2.0
All dimension is in mm & other sizes available on request			

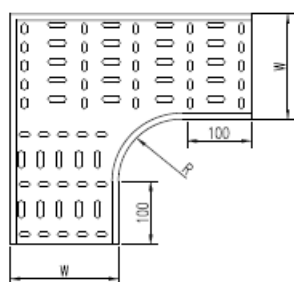
Heavy Duty			
Width (W)	Height (H)	Length (L)	Thickness
100	50	2440-3000	1.0-2.0
150	50	2440-3000	1.0-2.0
200	50	2440-3000	1.0-2.0
300	50	2440-3000	1.0-2.0
450	50	2440-3000	1.0-2.0
600	50	2440-3000	1.0-2.0
800	50	2440-3000	1.0-2.0
All dimension is in mm & other sizes available on request			

Extra Heavy Duty			
Width (W)	Height (H)	Length (L)	Thickness
150	50-100	2440-3000	1.0-2.0
300	50-100	2440-3000	1.0-2.0
450	50-100	2440-3000	1.0-2.0
600	50-100	2440-3000	1.0-2.0
750	50-100	2440-3000	1.0-2.0
900	50-100	2440-3000	1.0-2.0
1000	50-100	2440-3000	1.0-2.0
All dimension is in mm & other sizes available on request			

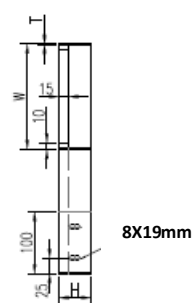


90 Deg Horizontal Flat Elbow

Type (1)

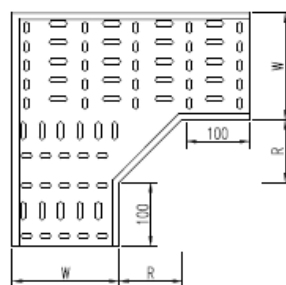


TOP VIEW

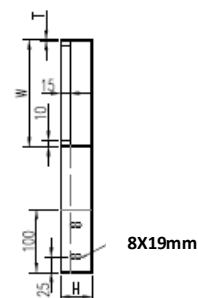


SIDE VIEW

Type (2)

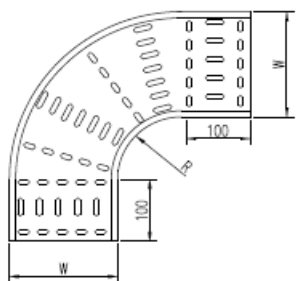


TOP VIEW

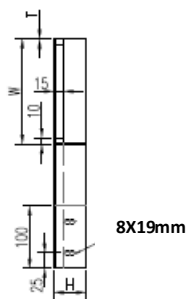


SIDE VIEW

Type (3)

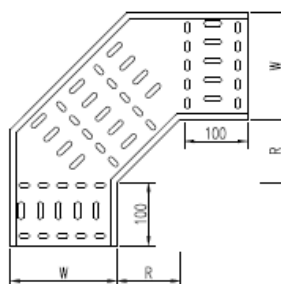


TOP VIEW

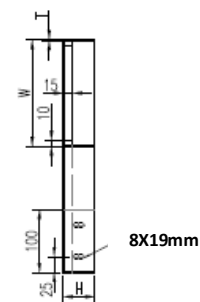


SIDE VIEW

Type (4)



TOP VIEW

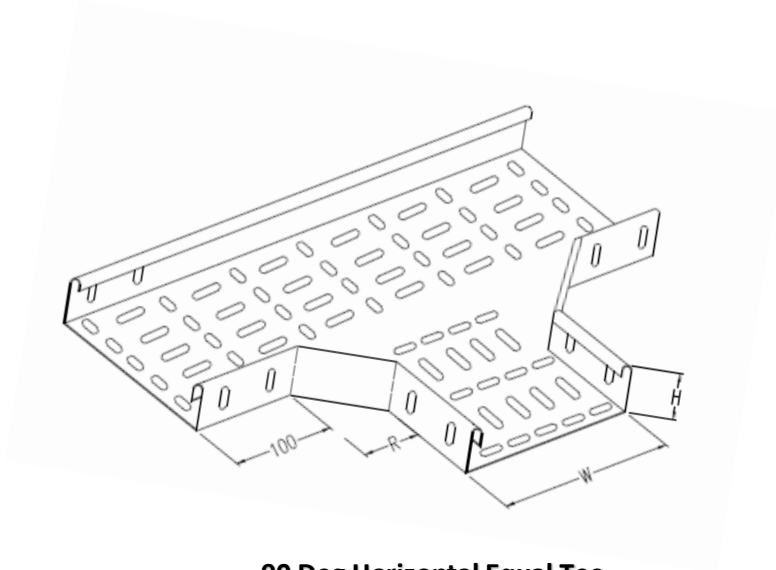


SIDE VIEW

Light Duty			
Width (W)	Height (H)	Radius (R)	Thickness
150	25	100	1.0-2.0
300	25	100	1.0-2.0
450	25	100	1.0-2.0
600	25	100	1.0-2.0
750	25	100	1.0-2.0
900	25	100	1.0-2.0
1000	25	100	1.0-2.0
All dimension is in mm & other sizes available on request			

Heavy Duty			
Width (W)	Height (H)	Radius (R)	Thickness
100	50	100	1.0-2.0
150	50	100	1.0-2.0
200	50	100	1.0-2.0
300	50	100	1.0-2.0
450	50	100	1.0-2.0
600	50	100	1.0-2.0
800	50	100	1.0-2.0
All dimension is in mm & other sizes available on request			

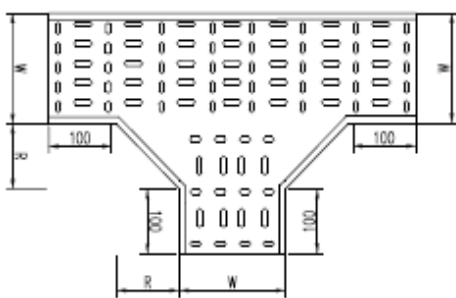
Extra Heavy Duty			
Width (W)	Height (H)	Radius (R)	Thickness
150	50-100	100	1.0-2.0
300	50-100	100	1.0-2.0
450	50-100	100	1.0-2.0
600	50-100	100	1.0-2.0
750	50-100	100	1.0-2.0
900	50-100	100	1.0-2.0
1000	50-100	100	1.0-2.0
All dimension is in mm & other sizes available on request			



90 Deg Horizontal Equal Tee

Type (1)

Type (2)

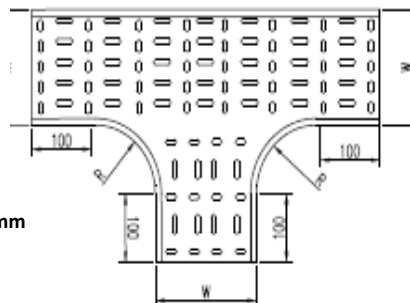


TOP VIEW

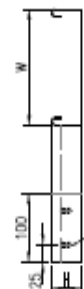


SIDE VIEW

8X19mm



TOP VIEW



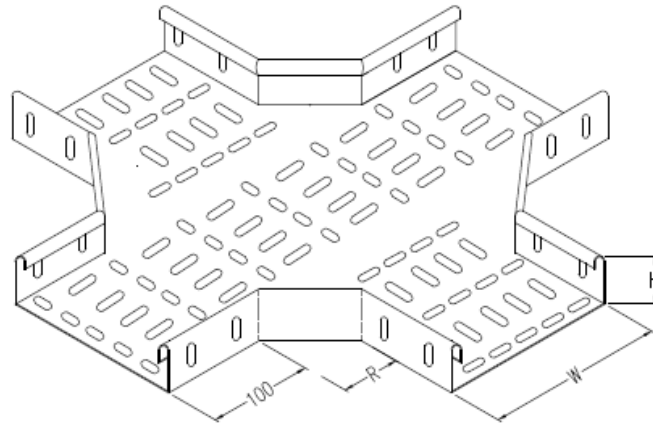
SIDE VIEW

8X19mm

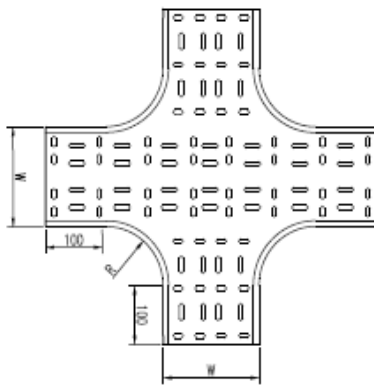
Light Duty			
Width (W)	Height (H)	Radius (R)	Thickness
150	25	100	1.0-2.0
300	25	100	1.0-2.0
450	25	100	1.0-2.0
600	25	100	1.0-2.0
750	25	100	1.0-2.0
900	25	100	1.0-2.0
1000	25	100	1.0-2.0
All dimension is in mm & other sizes available on request			

Heavy Duty			
Width (W)	Height (H)	Radius (R)	Thickness
100	50	100	1.0-2.0
150	50	100	1.0-2.0
200	50	100	1.0-2.0
300	50	100	1.0-2.0
450	50	100	1.0-2.0
600	50	100	1.0-2.0
800	50	100	1.0-2.0
All dimension is in mm & other sizes available on request			

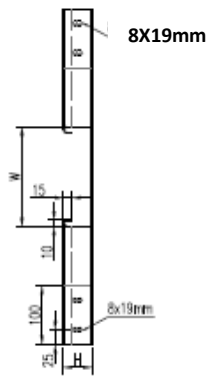
Extra Heavy Duty			
Width (W)	Height (H)	Radius (R)	Thickness
150	50-100	100	1.0-2.0
300	50-100	100	1.0-2.0
450	50-100	100	1.0-2.0
600	50-100	100	1.0-2.0
750	50-100	100	1.0-2.0
900	50-100	100	1.0-2.0
1000	50-100	100	1.0-2.0
All dimension is in mm & other sizes available on request			



90 Deg Horizontal Equal Cross

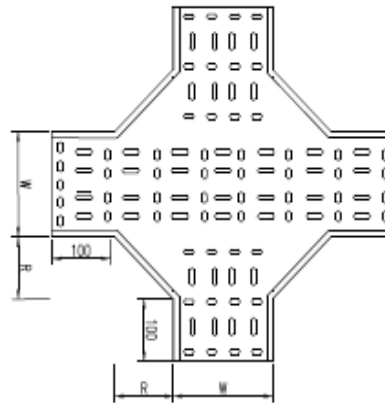


TOP VIEW

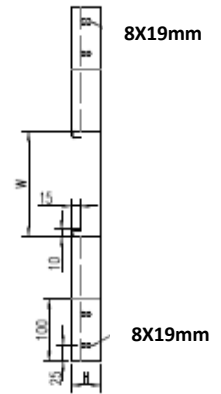


SIDE VIEW

Type (1)



TOP VIEW



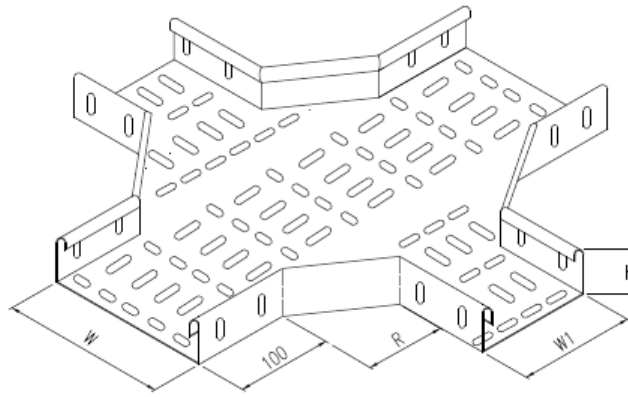
SIDE VIEW

Type (2)

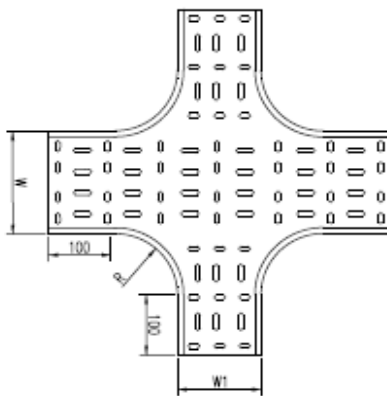
Light Duty			
Width (W)	Height (H)	Radius (R)	Thickness
150	25	100	1.0-2.0
300	25	100	1.0-2.0
450	25	100	1.0-2.0
600	25	100	1.0-2.0
750	25	100	1.0-2.0
900	25	100	1.0-2.0
1000	25	100	1.0-2.0
All dimension is in mm & other sizes available on request			

Heavy Duty			
Width (W)	Height (H)	Radius (R)	Thickness
100	50	100	1.0-2.0
150	50	100	1.0-2.0
200	50	100	1.0-2.0
300	50	100	1.0-2.0
450	50	100	1.0-2.0
600	50	100	1.0-2.0
800	50	100	1.0-2.0
All dimension is in mm & other sizes available on request			

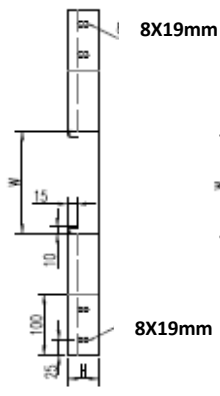
Extra Heavy Duty			
Width (W)	Height (H)	Radius (R)	Thickness
150	50-100	100	1.0-2.0
300	50-100	100	1.0-2.0
450	50-100	100	1.0-2.0
600	50-100	100	1.0-2.0
750	50-100	100	1.0-2.0
900	50-100	100	1.0-2.0
1000	50-100	100	1.0-2.0
All dimension is in mm & other sizes available on request			



90 Deg Horizontal Unequal Cross

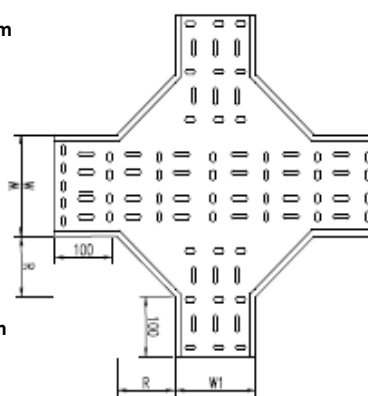


TOP VIEW

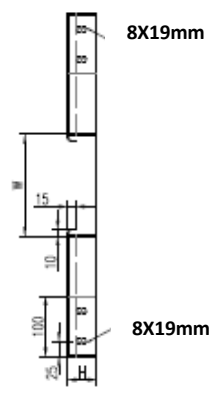


SIDE VIEW

Type (1)



TOP VIEW



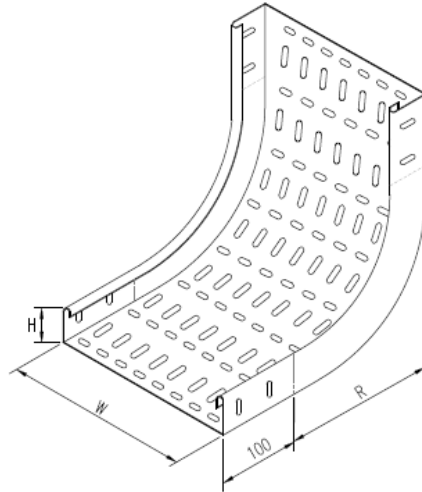
SIDE VIEW

Type (2)

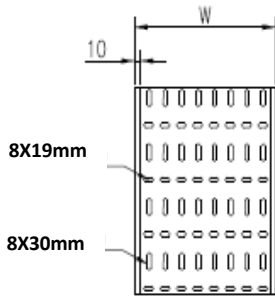
Light Duty				
Width (W)	Height (H)	W1	Radius (R)	Thickness
200	25	100	100	1.0-2.0
300	25	100	100	1.0-2.0
450	25	100	100	1.0-2.0
300	25	150	100	1.0-2.0
450	25	150	100	1.0-2.0
600	25	150	100	1.0-2.0
600	25	300	100	1.0-2.0
All dimension is in mm & other sizes available on request				

Heavy Duty				
Width (W)	Height (H)	W1	Radius (R)	Thickness
300	50	150	100	1.0-2.0
450	50	150	100	1.0-2.0
600	50	150	100	1.0-2.0
450	50	300	100	1.0-2.0
600	50	300	100	1.0-2.0
750	50	300	100	1.0-2.0
900	50	300	100	1.0-2.0
All dimension is in mm & other sizes available on request				

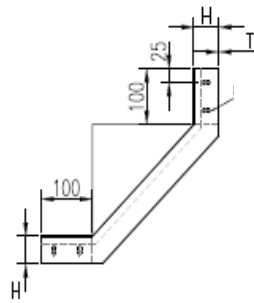
Extra Heavy Duty				
Width (W)	Height (H)	W1	Radius (R)	Thickness
300	50-100	150	100	1.0-2.0
450	50-100	150	100	1.0-2.0
600	50-100	150	100	1.0-2.0
600	50-100	300	100	1.0-2.0
750	50-100	300	100	1.0-2.0
900	50-100	300	100	1.0-2.0
1000	50-100	450	100	1.0-2.0
All dimension is in mm & other sizes available on request				



90 Deg Vertical Inside Riser



TOP VIEW



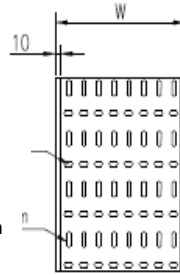
SIDE VIEW

Type (1)

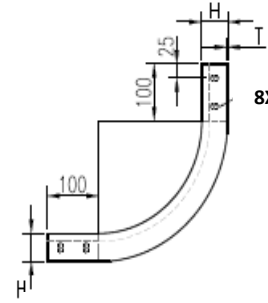
8X19mm

8X19mm

8X30mm



TOP VIEW



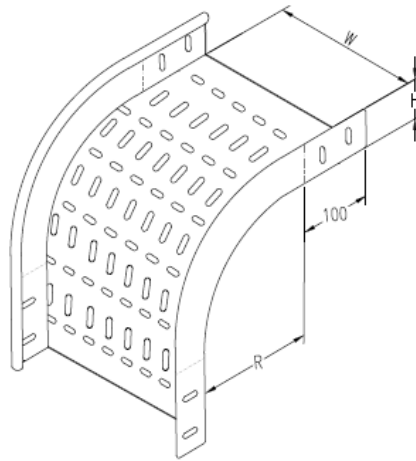
SIDE VIEW

Type (2)

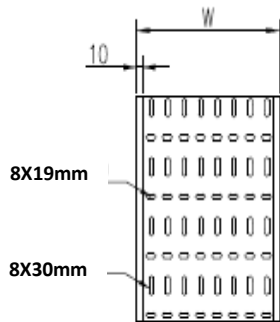
Light Duty			
Width (W)	Height (H)	Radius (R)	Thickness
150	25	200	1.0-2.0
300	25	200	1.0-2.0
450	25	200	1.0-2.0
600	25	200	1.0-2.0
750	25	200	1.0-2.0
900	25	200	1.0-2.0
1000	25	200	1.0-2.0
All dimension is in mm & other sizes available on request			

Heavy Duty			
Width (W)	Height (H)	Radius (R)	Thickness
100	50	200	1.0-2.0
150	50	200	1.0-2.0
200	50	200	1.0-2.0
300	50	200	1.0-2.0
450	50	200	1.0-2.0
600	50	200	1.0-2.0
800	50	200	1.0-2.0
All dimension is in mm & other sizes available on request			

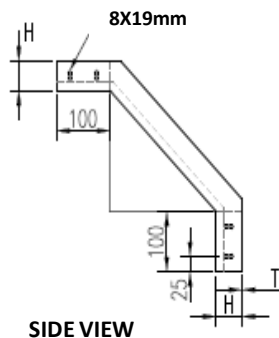
Extra Heavy Duty			
Width (W)	Height (H)	Radius (R)	Thickness
150	50-100	200	1.0-2.0
300	50-100	200	1.0-2.0
450	50-100	200	1.0-2.0
600	50-100	200	1.0-2.0
750	50-100	200	1.0-2.0
900	50-100	200	1.0-2.0
1000	50-100	200	1.0-2.0
All dimension is in mm & other sizes available on request			



90 Deg Vertical Outside Riser

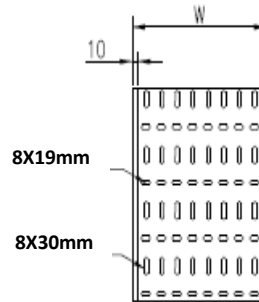


TOP VIEW

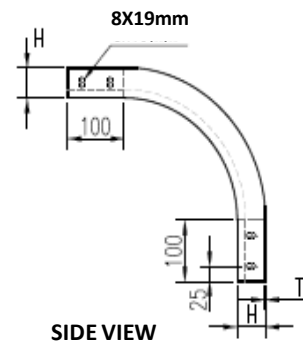


SIDE VIEW

Type (1)



TOP VIEW



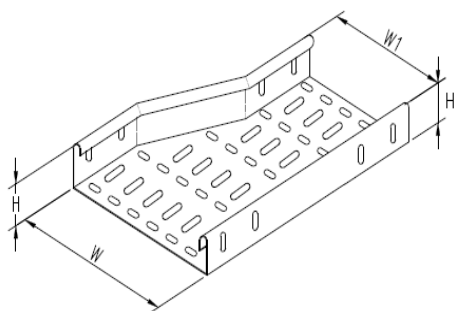
SIDE VIEW

Type (2)

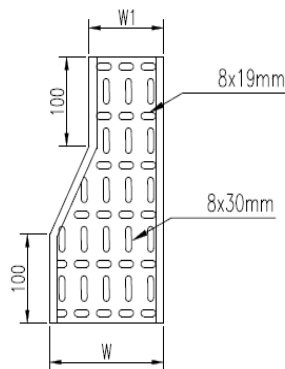
Light Duty			
Width (W)	Height (H)	Radius (R)	Thickness
150	25	200	1.0-2.0
300	25	200	1.0-2.0
450	25	200	1.0-2.0
600	25	200	1.0-2.0
750	25	200	1.0-2.0
900	25	200	1.0-2.0
1000	25	200	1.0-2.0
All dimension is in mm & other sizes available on request			

Heavy Duty			
Width (W)	Height (H)	Radius (R)	Thickness
100	50	200	1.0-2.0
150	50	200	1.0-2.0
200	50	200	1.0-2.0
300	50	200	1.0-2.0
450	50	200	1.0-2.0
600	50	200	1.0-2.0
800	50	200	1.0-2.0
All dimension is in mm & other sizes available on request			

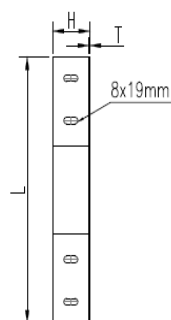
Extra Heavy Duty			
Width (W)	Height (H)	Radius (R)	Thickness
150	50-100	200	1.0-2.0
300	50-100	200	1.0-2.0
450	50-100	200	1.0-2.0
600	50-100	200	1.0-2.0
750	50-100	200	1.0-2.0
900	50-100	200	1.0-2.0
1000	50-100	200	1.0-2.0
All dimension is in mm & other sizes available on request			



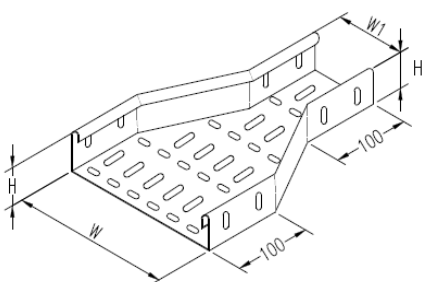
Offset Right Reducer



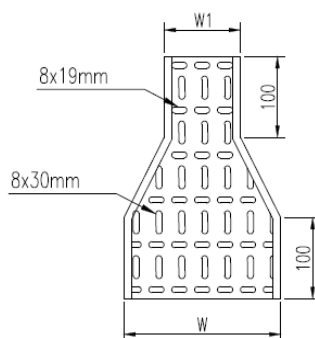
TOP VIEW



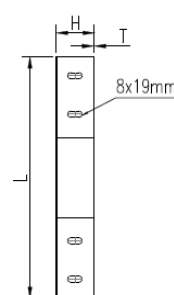
SIDE VIEW



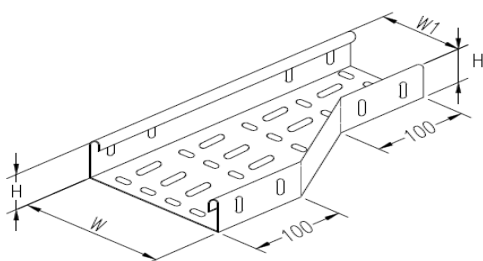
Offset Straight Reducer



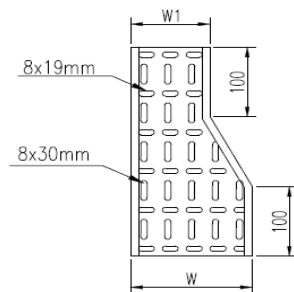
TOP VIEW



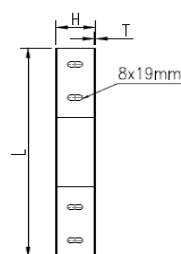
SIDE VIEW



Offset Left Reducer



TOP VIEW

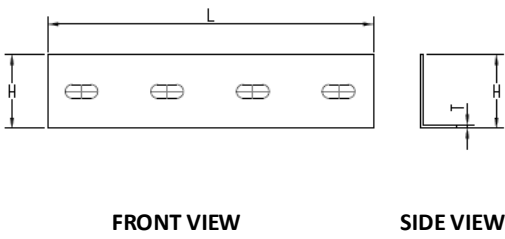


SIDE VIEW

Light Duty			
Width (W)	Width (W1)	Height (H)	Thickness
150	100	25	1.0-2.0
200	100-150	25	1.0-2.0
300	100	25	1.0-2.0
300	150-200	25	1.0-2.0
450	100-150	25	1.0-2.0
450	200-300	25	1.0-2.0
600	100-200	25	1.0-2.0
600	300-450	25	1.0-2.0
All dimension is in mm & other sizes available on request			

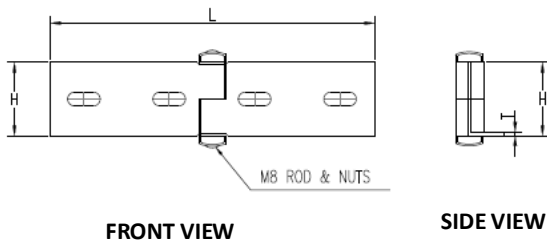
Heavy Duty			
Width (W)	Width (W1)	Height (H)	Thickness
150	100	50	1.0-2.0
200	100-150	50	1.0-2.0
300	100	50	1.0-2.0
300	150-200	50	1.0-2.0
450	100-150	50	1.0-2.0
450	200-300	50	1.0-2.0
600	100-200	50	1.0-2.0
600	300-450	50	1.0-2.0
All dimension is in mm & other sizes available on request			

Extra Heavy Duty			
Width (W)	Width (W1)	Height (H)	Thickness
150	100	50-100	1.0-2.0
200	100-150	50-100	1.0-2.0
300	100	50-100	1.0-2.0
450	100-150	50-100	1.0-2.0
450	200-300	50-100	1.0-2.0
600	100-200	50-100	1.0-2.0
600	300-450	50-100	1.0-2.0
All dimension is in mm & other sizes available on request			

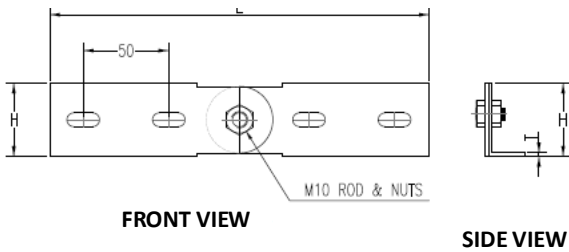


Straight Joint			
Height Tray	Height (H)	Length (L)	Thickness
50	43	190	1.5-2.0
75	68	190	1.5-2.0
100	93	190	1.5-2.0
125	118	190	2.0
150	143	190	2.0

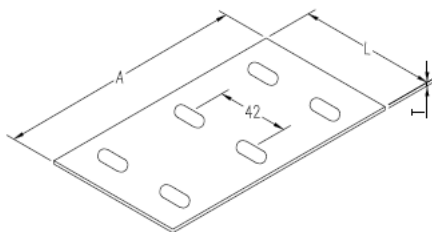
Apply on return flange tray



Horizontal Joint			
Height Tray	Height (H)	Length (L)	Thickness
50	43	210	1.5-2.0
75	68	210	1.5-2.0
100	93	210	1.5-2.0
125	118	210	2.0
150	143	210	2.0



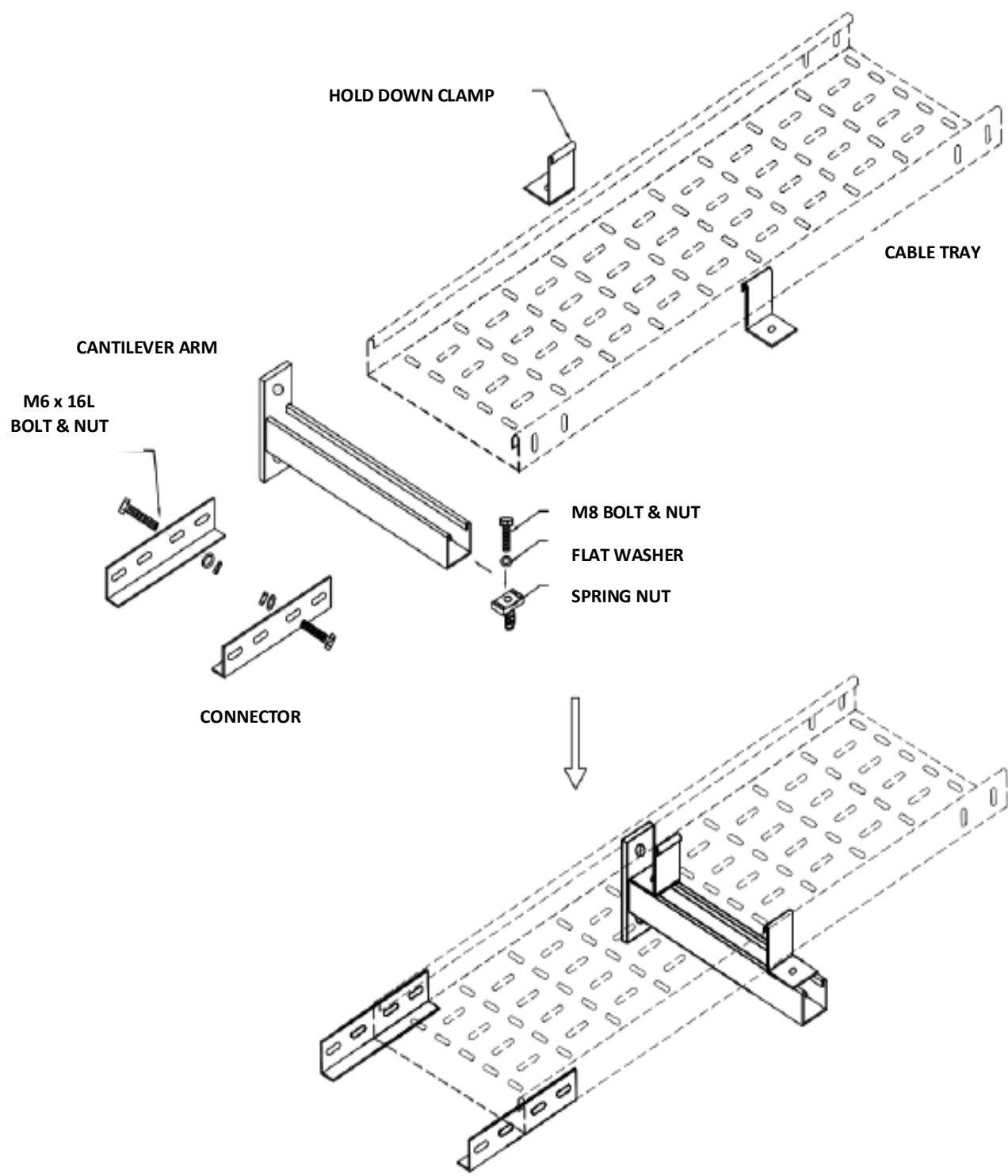
Vertical Joint			
Height Tray	Height (H)	Length (L)	Thickness
50	43	250	1.5-2.0
75	68	250	1.5-2.0
100	93	250	1.5-2.0
125	118	250	2.0
150	143	250	2.0



Fish Joint			
Height Tray	Height (H)	Length (L)	Thickness
50	43	180	1.2
75	68	180	1.2
100	93	180	1.2-1.5
125	118	180	1.2-1.5
150	143	180	1.2-1.5

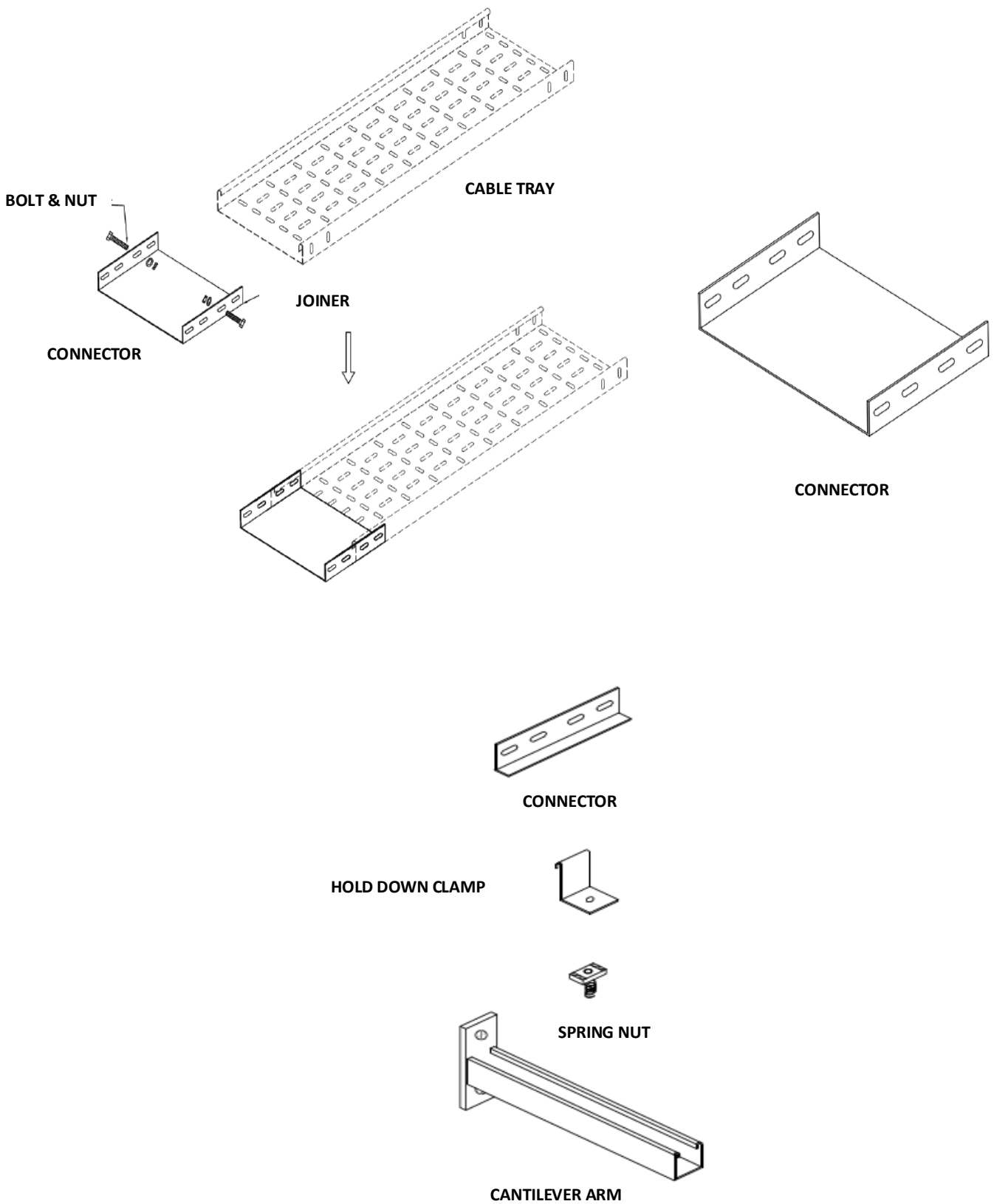
CABLE TRAY FITTINGS

In the interest of continuous improvements, SMART International Pte Ltd reserves the right without prior notice to alter the design and specification of their product.



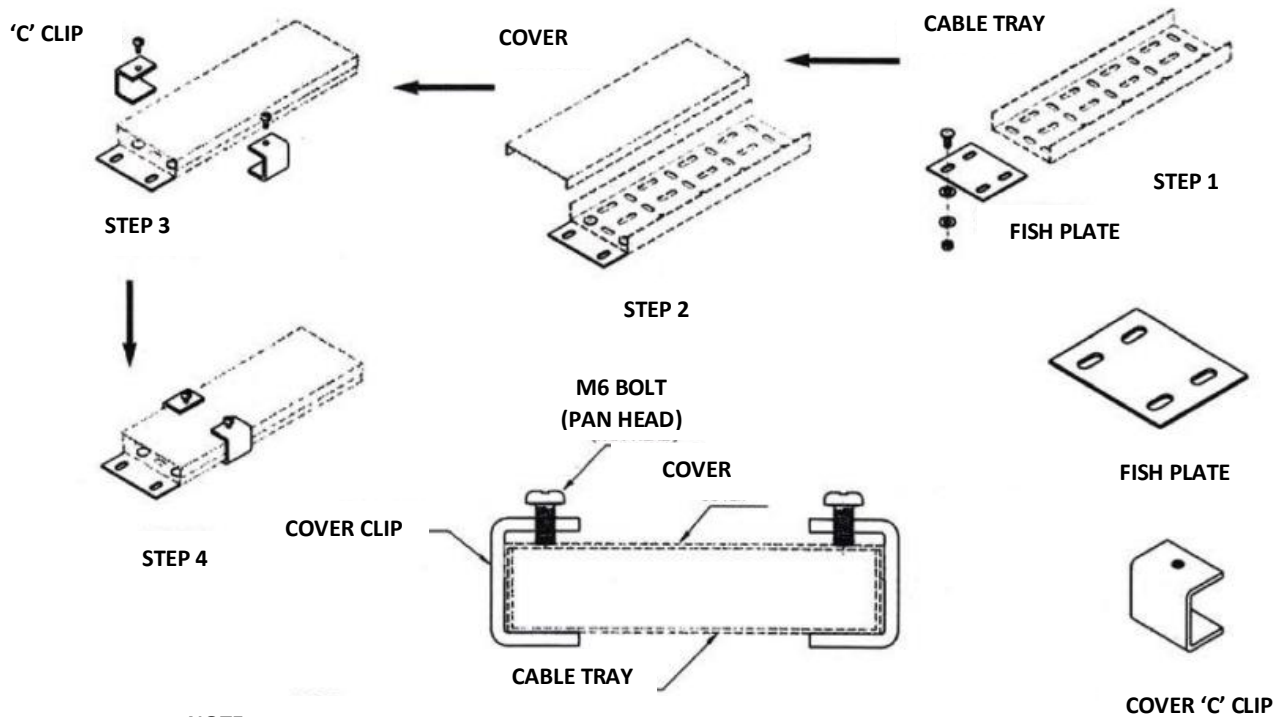
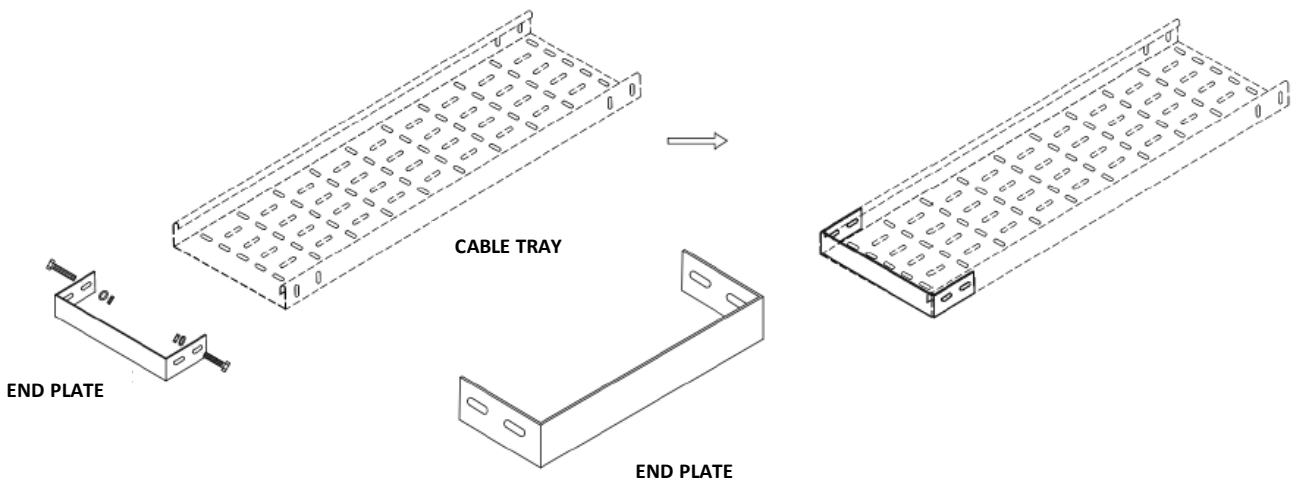
CABLE TRAY FITTINGS

In the interest of continuous improvements, SMART International Pte Ltd reserves the right without prior notice to alter the design and specification of their product.



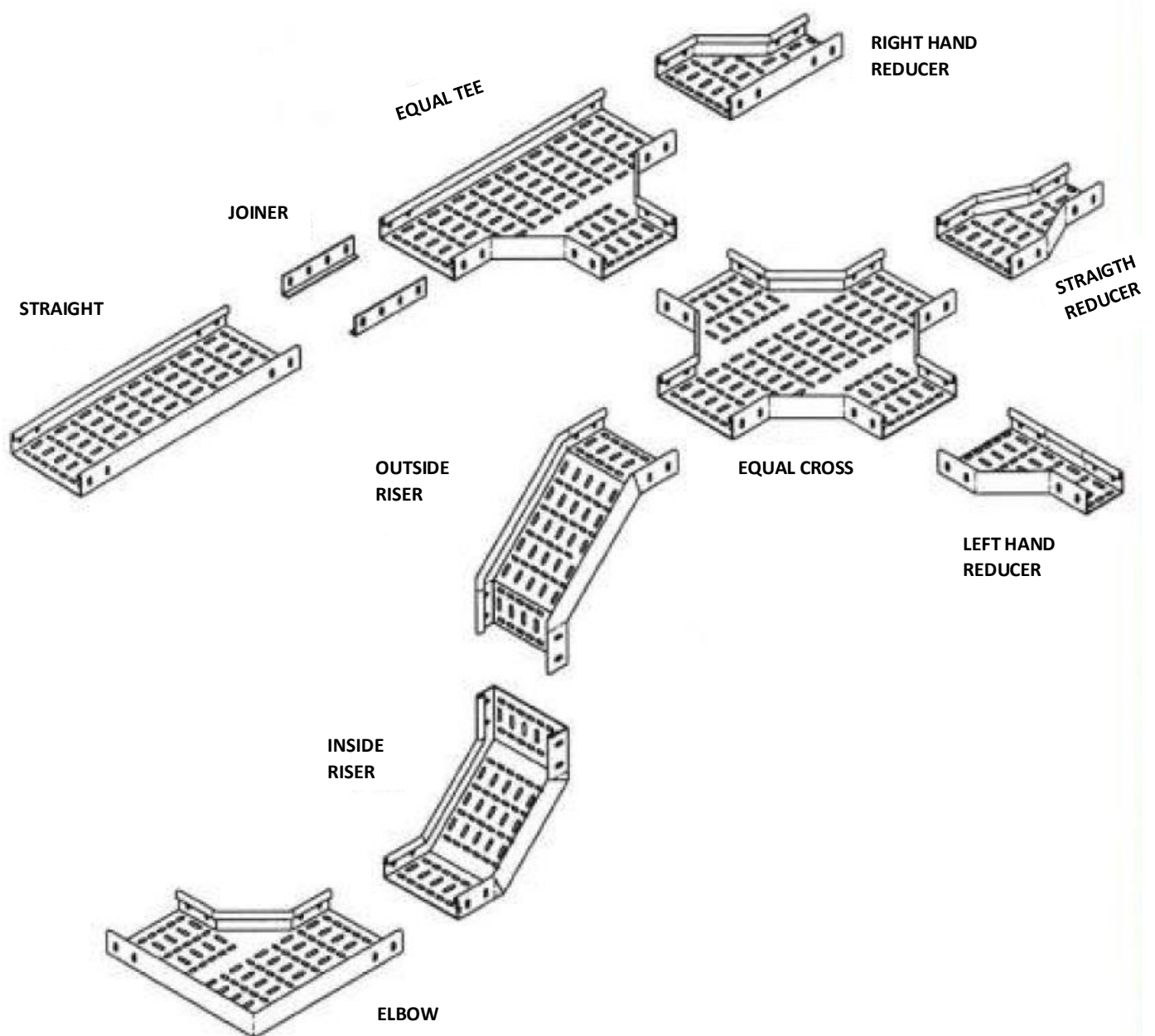
CABLE TRAY FITTINGS

In the interest of continuous improvements, SMART International Pte Ltd reserves the right without prior notice to alter the design and specification of their product.

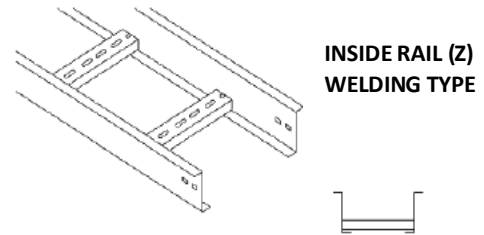
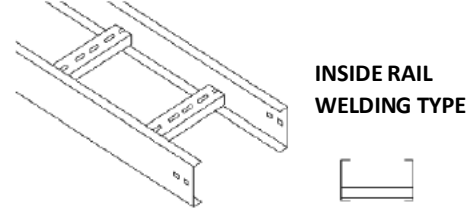
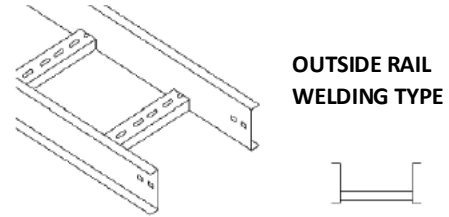
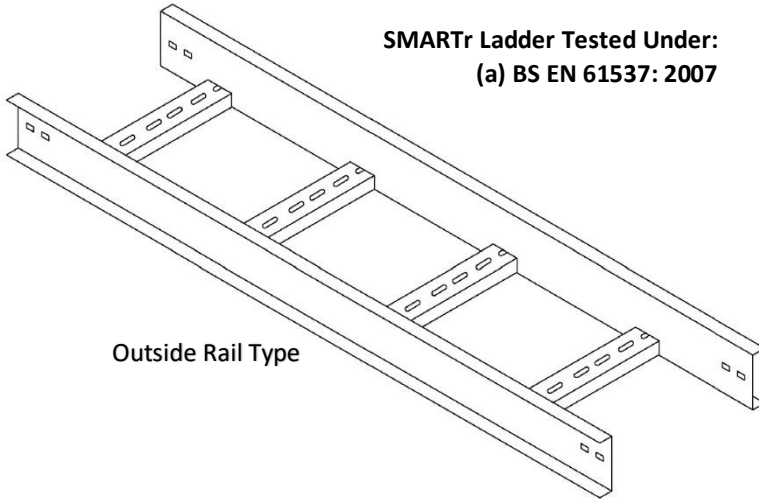


NOTE:
 HDG PUNCHING PLATE C/W COVER & 6 PCS OF COVER CLIP (C TYPE) WITH 6 PCS OF M6 X 12L PAN HEAD BOLT X 1 PCS OF STRAIGHT FISH PLATE X 4 SETS OF SS M8 X 20L CARRIAGE BOLT, NUT, 1 FLAT WASHER & 1 SPRING WASHER.

Typical Cable Tray fittings Installation.



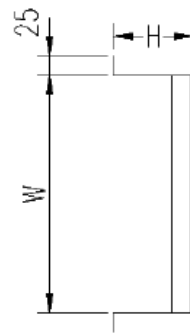
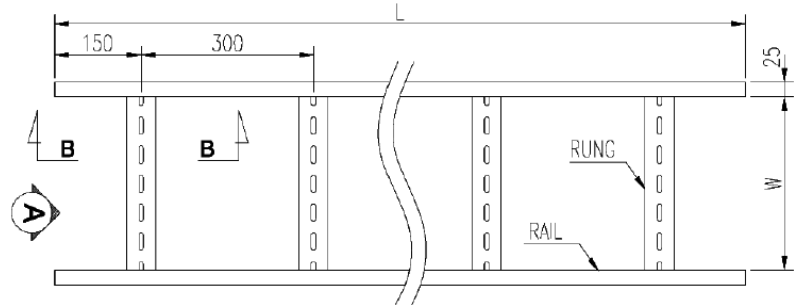
SMARTr Ladder Tested Under: (a) BS EN 61537: 2007



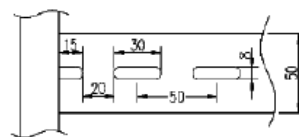
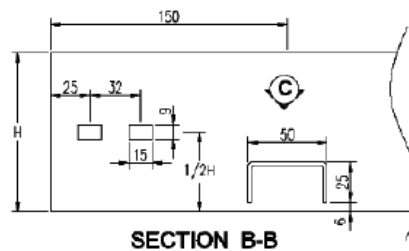
Medium Duty			
Width (W)	Height (H)	Length (L)	Thickness
150	75-100	2440-3000	1.5-2.0
300	75-100	2440-3000	1.5-2.0
450	75-100	2440-3000	1.5-2.0
600	75-100	2440-3000	1.5-2.0
750	75-100	2440-3000	1.5-2.0
900	75-100	2440-3000	1.5-2.0
1000	75-100	2440-3000	1.5-2.0
All dimension is in mm & other sizes available on request			

Heavy Duty			
Width (W)	Height (H)	Length (L)	Thickness
150	125-150	2440-3000	1.5-2.0
300	125-150	2440-3000	1.5-2.0
450	125-150	2440-3000	2.0
600	125-150	2440-3000	2.0
750	125-150	2440-3000	2.0
900	125-150	2440-3000	2.0
1000	125-150	2440-3000	2.0
All dimension is in mm & other sizes available on request			

Extra Heavy Duty			
Width (W)	Height (H)	Length (L)	Thickness
150	175-200	2440-3000	2.0
300	175-200	2440-3000	2.0
450	175-200	2440-3000	2.0
600	175-200	2440-3000	2.0
750	175-200	2440-3000	2.0
900	175-200	2440-3000	2.0
1000	175-200	2440-3000	2.0
All dimension is in mm & other sizes available on request			

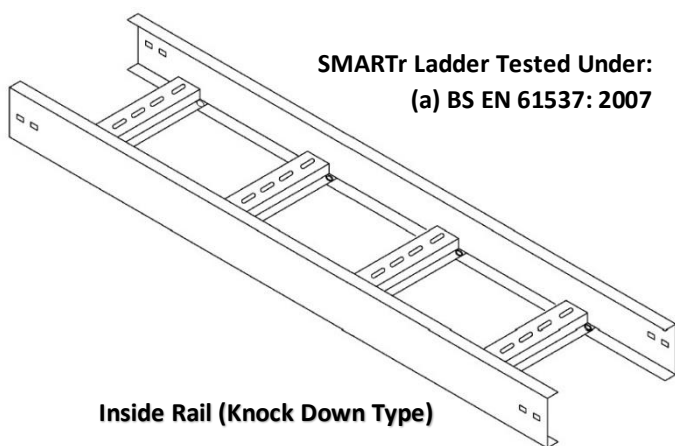


VIEW A

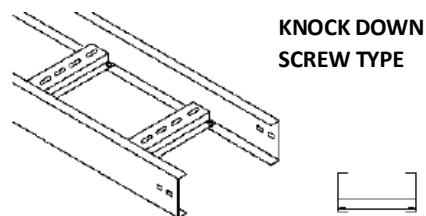


VIEW C

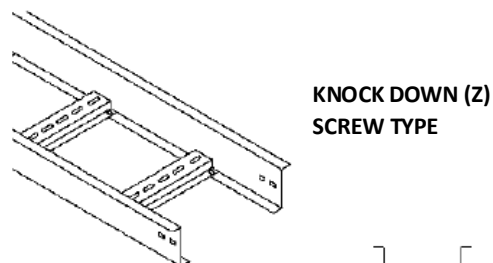
SMARTr Ladder Tested Under:
(a) BS EN 61537: 2007



Inside Rail (Knock Down Type)



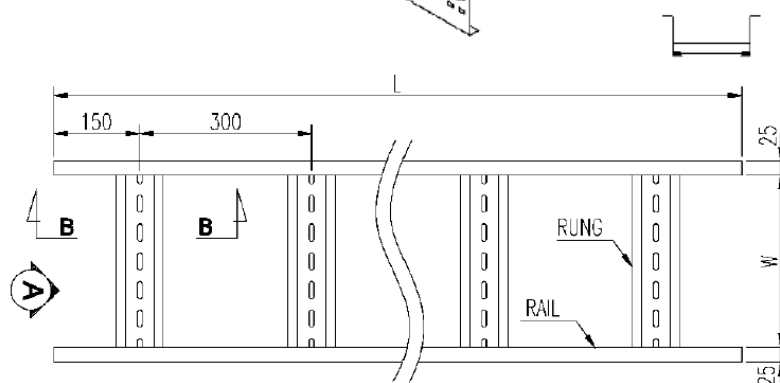
KNOCK DOWN
SCREW TYPE



KNOCK DOWN (Z)
SCREW TYPE

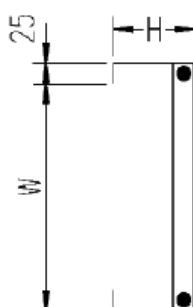
Medium Duty			
Width (W)	Height (H)	Length (L)	Thickness
150	75-100	2440-3000	1.5-2.0
300	75-100	2440-3000	1.5-2.0
450	75-100	2440-3000	1.5-2.0
600	75-100	2440-3000	1.5-2.0
750	75-100	2440-3000	1.5-2.0
900	75-100	2440-3000	1.5-2.0
1000	75-100	2440-3000	1.5-2.0

All dimension is in mm & other sizes available on request

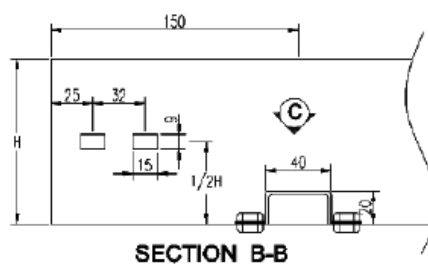


Heavy Duty			
Width (W)	Height (H)	Length (L)	Thickness
150	125-150	2440-3000	2.0
300	125-150	2440-3000	2.0
450	125-150	2440-3000	2.0
600	125-150	2440-3000	2.0
750	125-150	2440-3000	2.0
900	125-150	2440-3000	2.0
1000	125-150	2440-3000	2.0

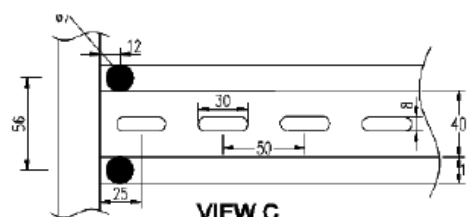
All dimension is in mm & other sizes available on request



VIEW A



SECTION B-B

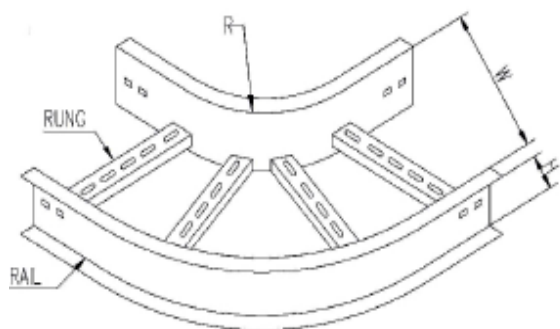


VIEW C

Extra Heavy Duty			
Width (W)	Height (H)	Length (L)	Thickness
150	175-200	2440-3000	2.0
300	175-200	2440-3000	2.0
450	175-200	2440-3000	2.0
600	175-200	2440-3000	2.0
750	175-200	2440-3000	2.0
900	175-200	2440-3000	2.0
1000	175-200	2440-3000	2.0

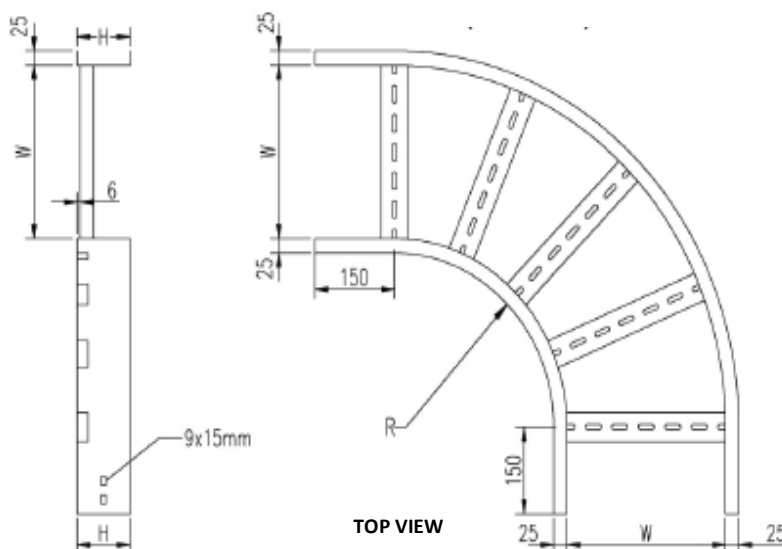
All dimension is in mm & other sizes available on request

90° HORIZONTAL FLAT ELBOW



FRONT VIEW

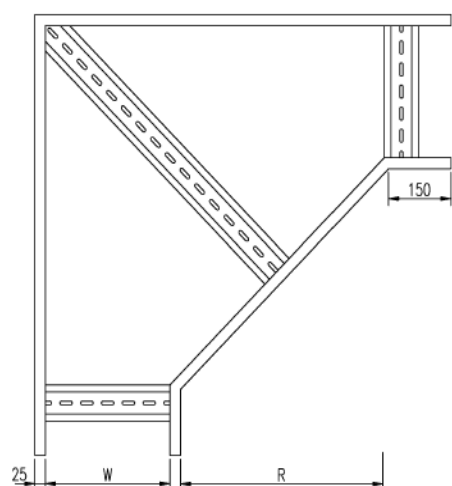
90° HORIZONTAL FLAT ELBOW
OUTSIDE RAIL (WELDING TYPE)



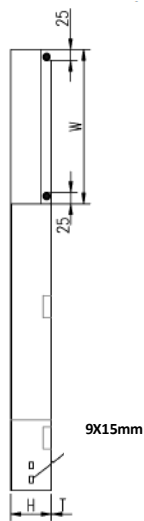
TOP VIEW

Type (1)

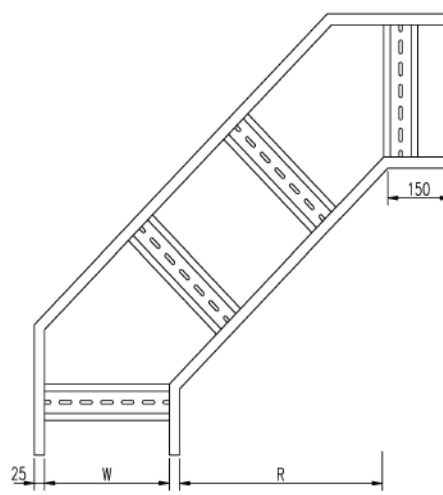
90° HORIZONTAL FLAT ELBOW
KNOCK DOWN (SCREW TYPE)



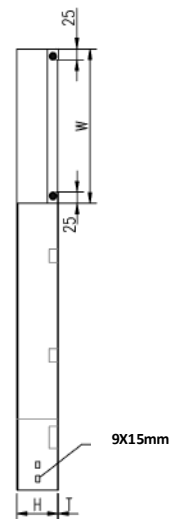
TOP VIEW



SIDE VIEW



TOP VIEW



SIDE VIEW

Type (2)

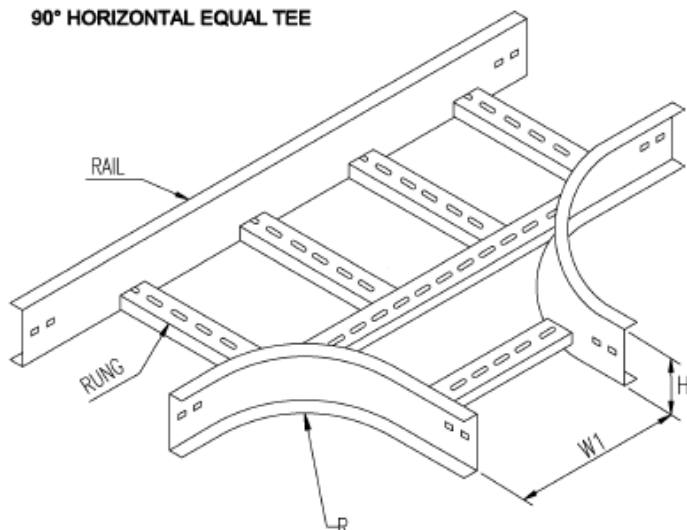
Type (3)

Medium Duty			
Width (W)	Height (H)	Radius	Thickness
150	75-100	300	1.5-2.0
300	75-100	300	1.5-2.0
450	75-100	300	1.5-2.0
600	75-100	300	1.5-2.0
750	75-100	300	1.5-2.0
900	75-100	300	1.5-2.0
1000	75-100	300	1.5-2.0
All dimension is in mm & other sizes available on request			

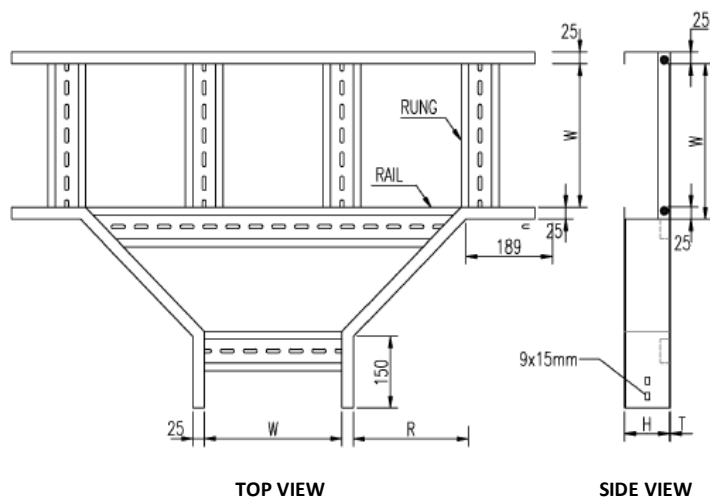
Heavy Duty			
Width (W)	Height (H)	Radius	Thickness
150	125-150	300-600	2.0
300	125-150	300-600	2.0
450	125-150	300-600	2.0
600	125-150	300-600	2.0
750	125-150	300-600	2.0
900	125-150	300-600	2.0
1000	125-150	300-600	2.0
All dimension is in mm & other sizes available on request			

Extra Heavy Duty			
Width (W)	Height (H)	Radius	Thickness
150	175-200	300-900	2.0
300	175-200	300-900	2.0
450	175-200	300-900	2.0
600	175-200	300-900	2.0
750	175-200	300-900	2.0
900	175-200	300-900	2.0
1000	175-200	300-900	2.0
All dimension is in mm & other sizes available on request			

90° HORIZONTAL EQUAL TEE

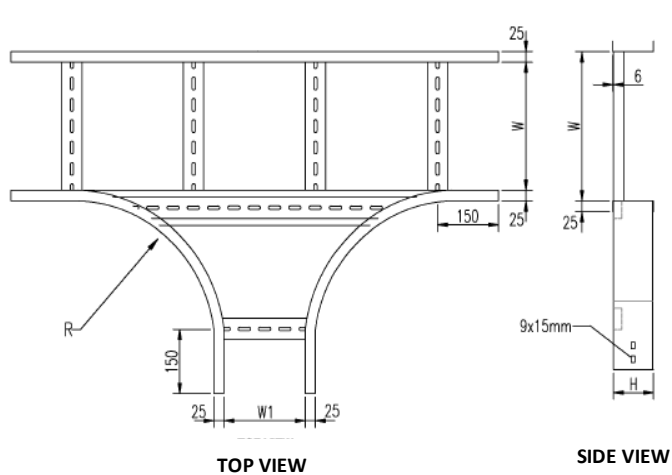


90° HORIZONTAL EQUAL TEE
KNOCK DOWN (SCREW TYPE)



Type (1)

90° HORIZONTAL EQUAL TEE
OUTSIDE RAIL (WELDING TYPE)



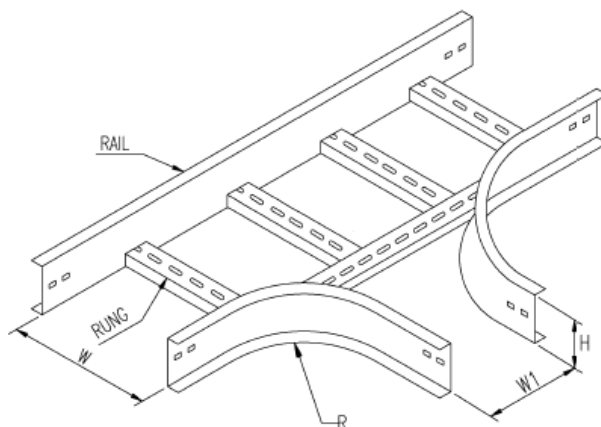
Type (2)

Medium Duty			
Width (W)	Height (H)	Radius	Thickness
150	75-100	300	1.5-2.0
300	75-100	300	1.5-2.0
450	75-100	300	1.5-2.0
600	75-100	300	1.5-2.0
750	75-100	300	1.5-2.0
900	75-100	300	1.5-2.0
1000	75-100	300	1.5-2.0

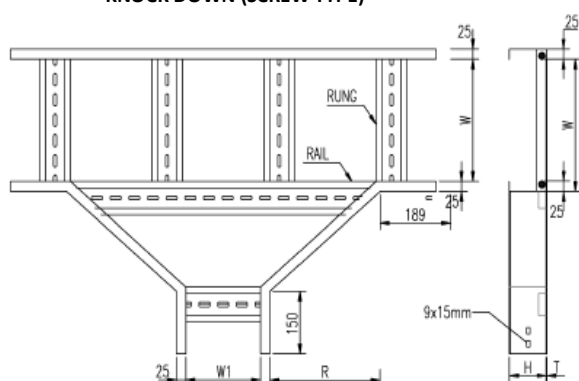
Heavy Duty			
Width (W)	Height (H)	Radius	Thickness
150	125-150	300-600	1.5-2.0
300	125-150	300-600	1.5-2.0
450	125-150	300-600	2.0
600	125-150	300-600	2.0
750	125-150	300-600	2.0
900	125-150	300-600	2.0
1000	125-150	300-600	2.0

Extra Heavy Duty			
Width (W)	Height (H)	Radius	Thickness
150	175-200	300-900	2.0
300	175-200	300-900	2.0
450	175-200	300-900	2.0
600	175-200	300-900	2.0
750	175-200	300-900	2.0
900	175-200	300-900	2.0
1000	175-200	300-900	2.0

90° HORIZONTAL UNEQUAL



90° HORIZONTAL UNEQUAL TEE KNOCK DOWN (SCREW TYPE)

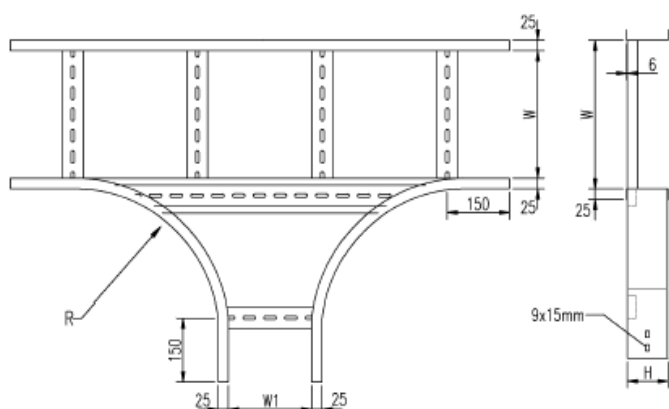


TOP VIEW

SIDE VIEW

Type (1)

90° HORIZONTAL UNEQUAL TEE OUTSIDE RAIL (WELDING TYPE)



TOP VIEW

SIDE VIEW

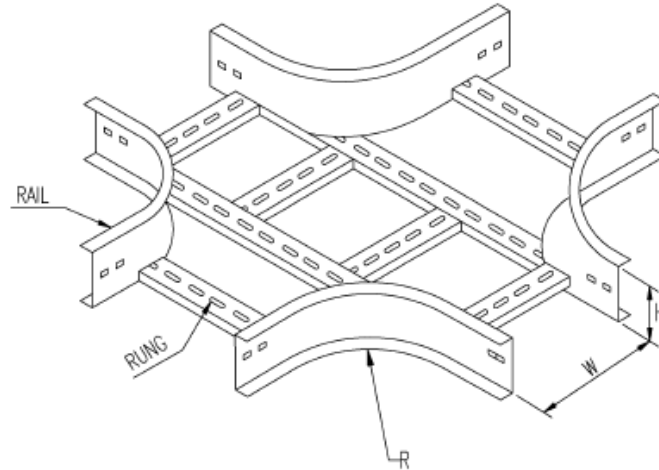
Type (2)

Medium Duty				
Width (W)	Height (H)	W1	Radius	Thickness
150	75-100	150	300	1.5-2.0
300	75-100	300	300	1.5-2.0
450	75-100	450	300	1.5-2.0
600	75-100	600	300	1.5-2.0
750	75-100	750	300	1.5-2.0
900	75-100	900	300	1.5-2.0
1000	75-100	1000	300	1.5-2.0

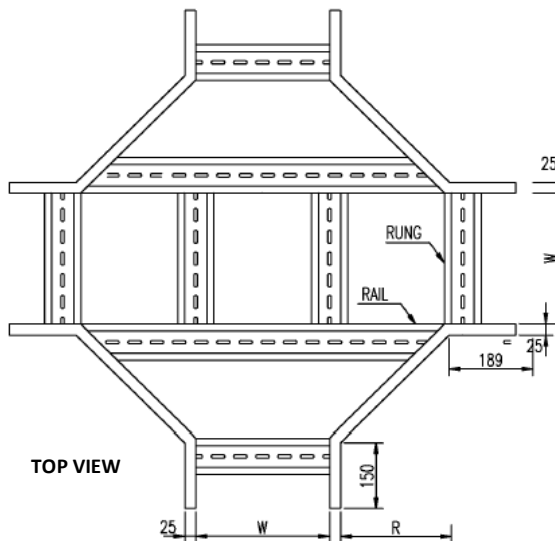
Heavy Duty				
Width (W)	Height (H)	W1	Radius	Thickness
150	125-150	150	300	1.5-2.0
300	125-150	300	300	1.5-2.0
450	125-150	450	300	2.0
600	125-150	600	300	2.0
750	125-150	750	300	2.0
900	125-150	900	300	2.0
1000	125-150	1000	300	2.0

Extra Heavy Duty				
Width (W)	Height (H)	W1	Radius	Thickness
150	175-200	150	300	2.0
300	175-200	300	300	2.0
450	175-200	450	300	2.0
600	175-200	600	300	2.0
750	175-200	750	300	2.0
900	175-200	900	300	2.0
1000	175-200	1000	300	2.0

90° HORIZONTAL EQUAL CROSS



90° HORIZONTAL EQUAL CROSS KNOCK DOWN (SCREW TYPE)

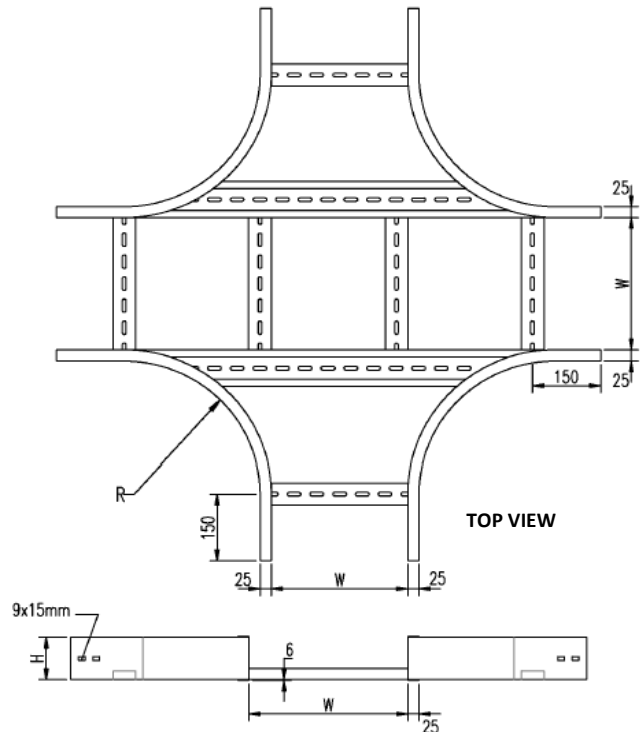


TOP VIEW

SIDE VIEW

Type (1)

90° HORIZONTAL EQUAL CROSS OUTSIDE RAIL (WELDING TYPE)



TOP VIEW

SIDE VIEW

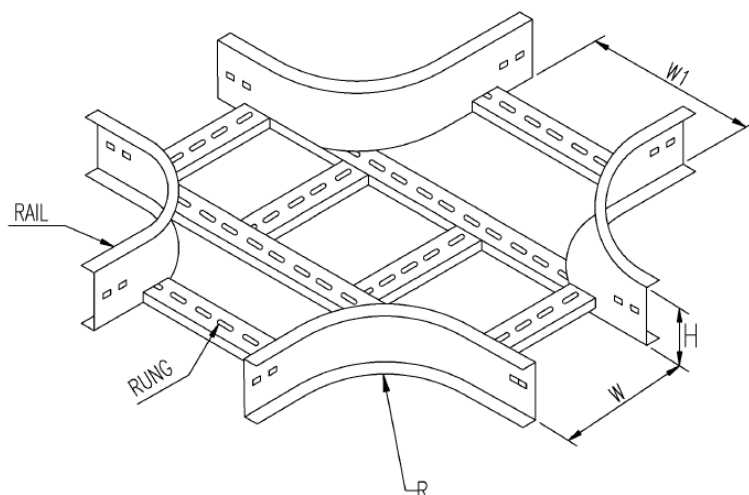
Type (2)

Medium Duty			
Width (W)	Height (H)	Radius	Thickness
150	75-100	300	1.5-2.0
300	75-100	300	1.5-2.0
450	75-100	300	1.5-2.0
600	75-100	300	1.5-2.0
750	75-100	300	1.5-2.0
900	75-100	300	1.5-2.0
1000	75-100	300	1.5-2.0

Heavy Duty			
Width (W)	Height (H)	Radius	Thickness
150	125-150	300-600	1.5-2.0
300	125-150	300-600	2.0
450	125-150	300-600	2.0
600	125-150	300-600	2.0
750	125-150	300-600	2.0
900	125-150	300-600	2.0
1000	125-150	300-600	2.0

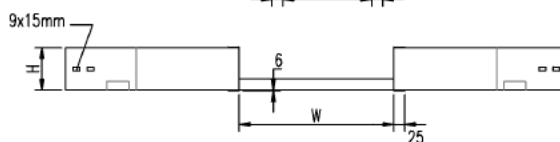
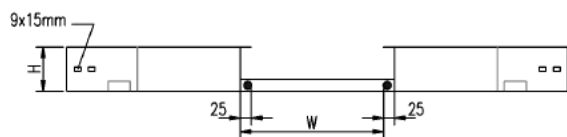
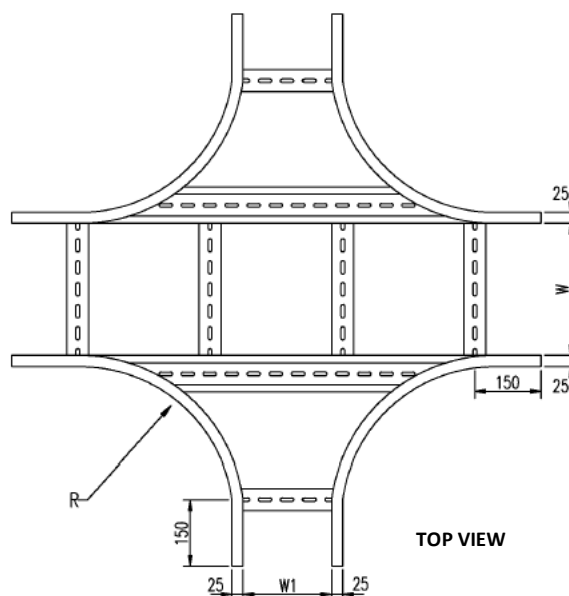
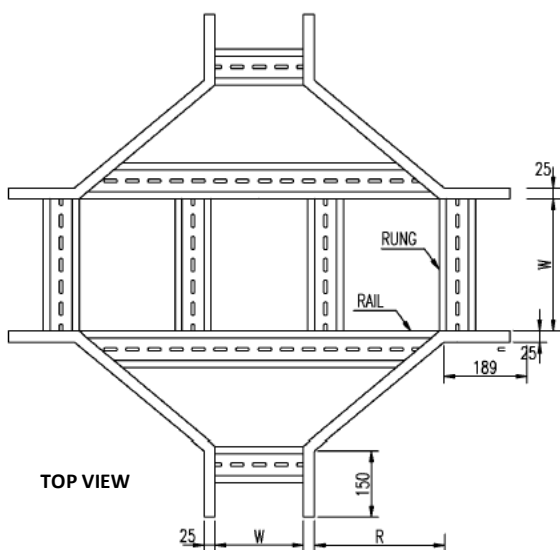
Extra Heavy Duty			
Width (W)	Height (H)	Radius	Thickness
150	175-200	300-900	2.0
300	175-200	300-900	2.0
450	175-200	300-900	2.0
600	175-200	300-900	2.0
750	175-200	300-900	2.0
900	175-200	300-900	2.0
1000	175-200	300-900	2.0

90° HORIZONTAL UNEQUAL CROSS



90° HORIZONTAL UNEQUAL CROSS KNOCK DOWN (SCREW TYPE)

90° HORIZONTAL UNEQUAL CROSS OUTSIDE RAIL (WELDING TYPE)



SIDE VIEW

SIDE VIEW

Type (1)

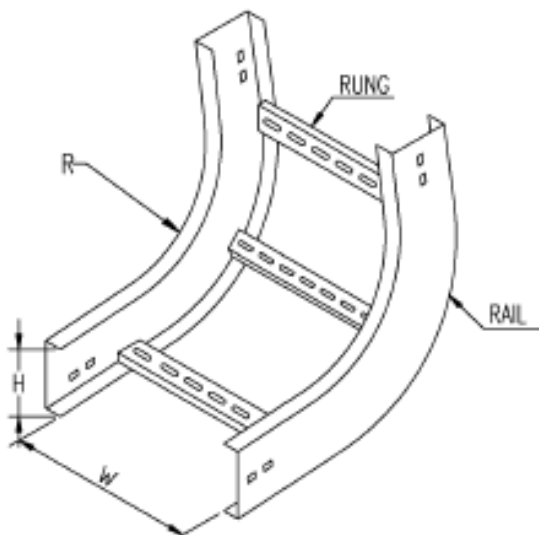
Type (2)

Extra Heavy Duty				
Width (W)	Height (H)	W1	Radius	Thickness
450	175-200	150	300	2.0
450	175-200	300	300	2.0
600	175-200	300	300	2.0
750	175-200	300	300	2.0
750	175-200	450	300	2.0
900	175-200	450	300	2.0
1000	175-200	450	300	2.0

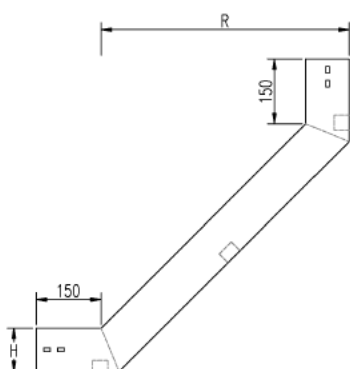
Heavy Duty				
Width (W)	Height (H)	W1	Radius	Thickness
300	125-150	150	300	1.5-2.0
450	125-150	150	300	2.0
450	125-150	300	300	2.0
600	125-150	300	300	2.0
750	125-150	300	300	2.0
900	125-150	300	300	2.0
900	125-150	450	300	2.0

Medium Duty				
Width (W)	Height (H)	W1	Radius	Thickness
300	75-100	150	300	1.5-2.0
450	75-100	150	300	1.5-2.0
600	75-100	150	300	1.5-2.0
450	75-100	300	300	1.5-2.0
600	75-100	300	300	1.5-2.0
750	75-100	300	300	1.5-2.0
900	75-100	300	300	1.5-2.0

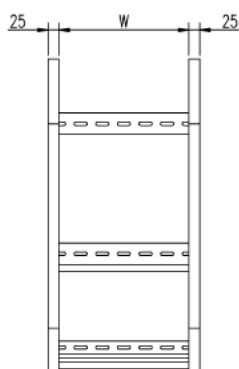
90° VERTICAL INSIDE RISER



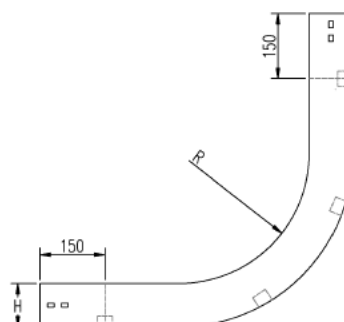
90° VERTICAL INSIDE RISER KNOCK DOWN (SCREW TYPE)



SIDE VIEW



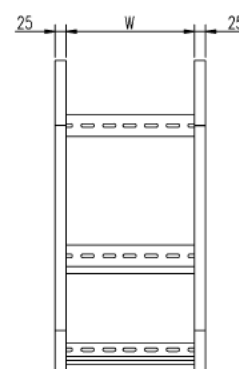
TOP VIEW



SIDE VIEW

Type (1)

90° VERTICAL INSIDE RISER OUTSIDE RAIL (WELDING TYPE)



TOP VIEW

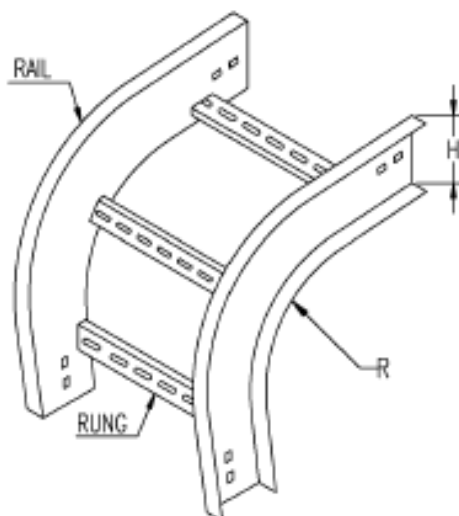
Type (2)

Medium Duty			
Width (W)	Height (H)	Radius	Thickness
150	75-100	300	1.5-2.0
300	75-100	300	1.5-2.0
450	75-100	300	1.5-2.0
600	75-100	300	1.5-2.0
750	75-100	300	1.5-2.0
900	75-100	300	1.5-2.0
1000	75-100	300	1.5-2.0

Heavy Duty			
Width (W)	Height (H)	Radius	Thickness
150	125-150	300-600	1.5-2.0
300	125-150	300-600	1.5-2.0
450	125-150	300-600	2.0
600	125-150	300-600	2.0
750	125-150	300-600	2.0
900	125-150	300-600	2.0
1000	125-150	300-600	2.0

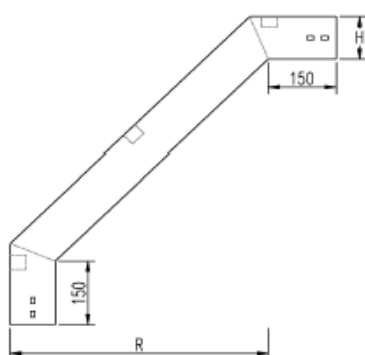
Extra Heavy Duty			
Width (W)	Height (H)	Radius	Thickness
150	175-200	300-900	2.0
300	175-200	300-900	2.0
450	175-200	300-900	2.0
600	175-200	300-900	2.0
750	175-200	300-900	2.0
900	175-200	300-900	2.0
1000	175-200	300-900	2.0

90° VERTICAL OUTSIDE RISER

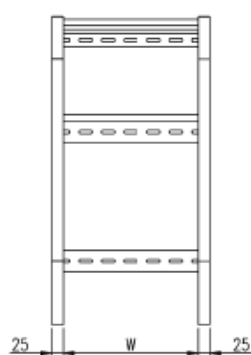


**90° VERTICAL OUTSIDE RISER
KNOCK DOWN (SCREW TYPE)**

**90° VERTICAL OUTSIDE RISER
OUTSIDE RAIL (WELDING TYPE)**

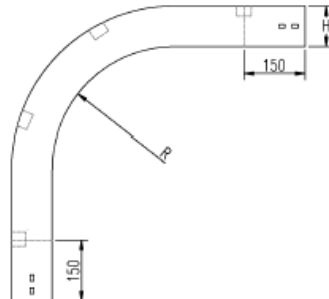


SIDE VIEW

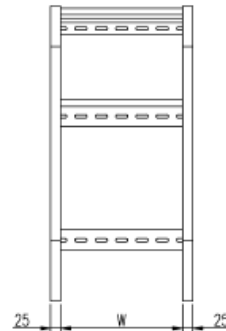


TOP VIEW

Type (1)



SIDE VIEW



TOP VIEW

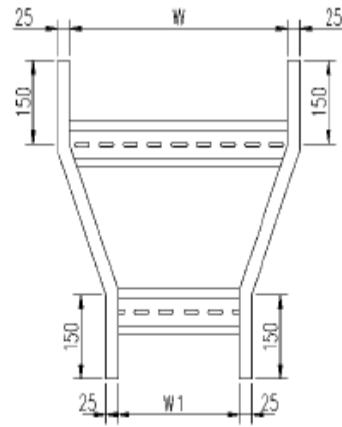
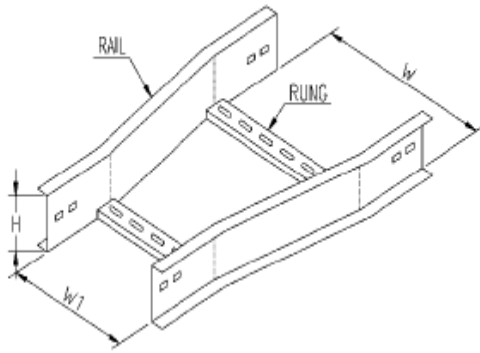
Type (2)

Medium Duty			
Width (W)	Height (H)	Radius	Thickness
150	75-100	300	1.5-2.0
300	75-100	300	1.5-2.0
450	75-100	300	1.5-2.0
600	75-100	300	1.5-2.0
750	75-100	300	1.5-2.0
900	75-100	300	1.5-2.0
1000	75-100	300	1.5-2.0

Heavy Duty			
Width (W)	Height (H)	Radius	Thickness
150	125-150	300-600	1.5-2.0
300	125-150	300-600	1.5-2.0
450	125-150	300-600	2.0
600	125-150	300-600	2.0
750	125-150	300-600	2.0
900	125-150	300-600	2.0
1000	125-150	300-600	2.0

Extra Heavy Duty			
Width (W)	Height (H)	Radius	Thickness
150	175-200	300-900	2.0
300	175-200	300-900	2.0
450	175-200	300-900	2.0
600	175-200	300-900	2.0
750	175-200	300-900	2.0
900	175-200	300-900	2.0
1000	175-200	300-900	2.0

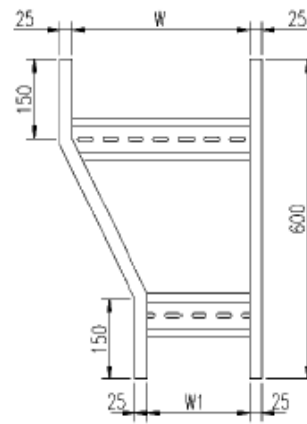
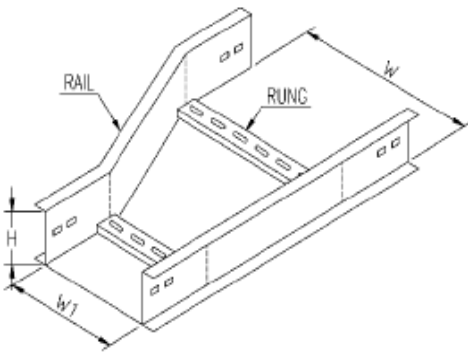
OFFSET STRAIGHT REDUCER



TOP VIEW

SIDE VIEW

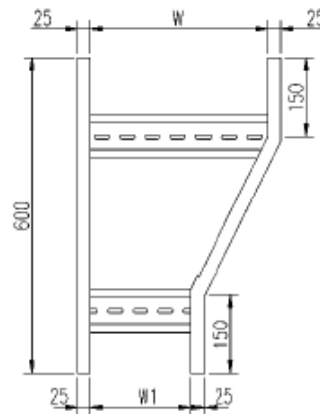
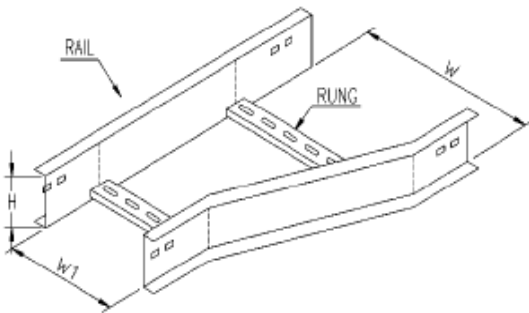
OFFSET LEFT HAND REDUCER



TOP VIEW

SIDE VIEW

OFFSET RIGHT HAND REDUCER



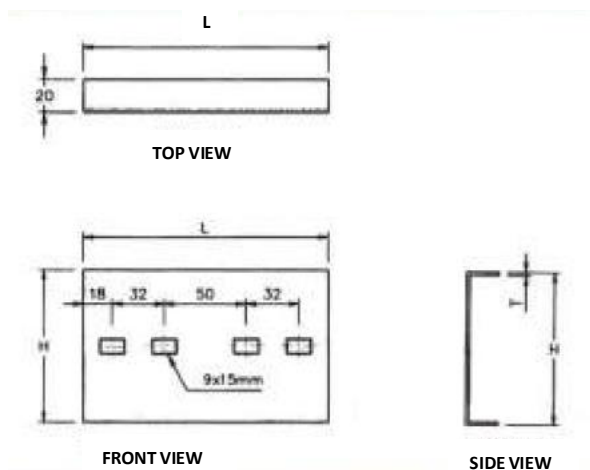
TOP VIEW

SIDE VIEW

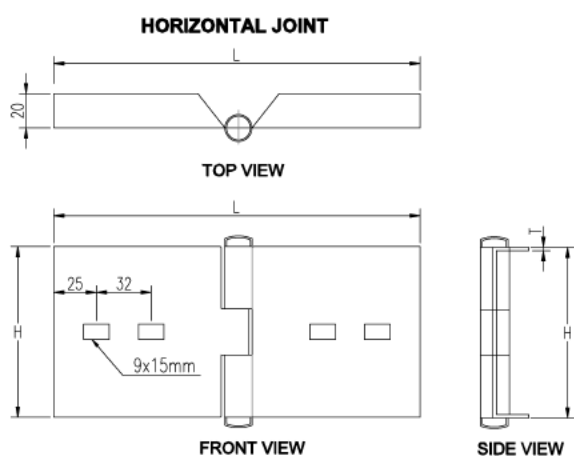
Medium Duty			
Width (W)	Height (H)	W1	Thickness
150	75-100	100	1.5-2.0
300	75-100	100	1.5-2.0
450	75-100	100	1.5-2.0
600	75-100	100	1.5-2.0
700	75-100	100	1.5-2.0
900	75-100	100	1.5-2.0
1000	75-100	100	1.5-2.0

Heavy Duty			
Width (W)	Height (H)	W1	Thickness
150	125-150	100	1.5-2.0
300	125-150	100	1.5-2.0
450	125-150	100	2.0
600	125-150	100	2.0
700	125-150	100	2.0
900	125-150	100	2.0
1000	125-150	100	2.0

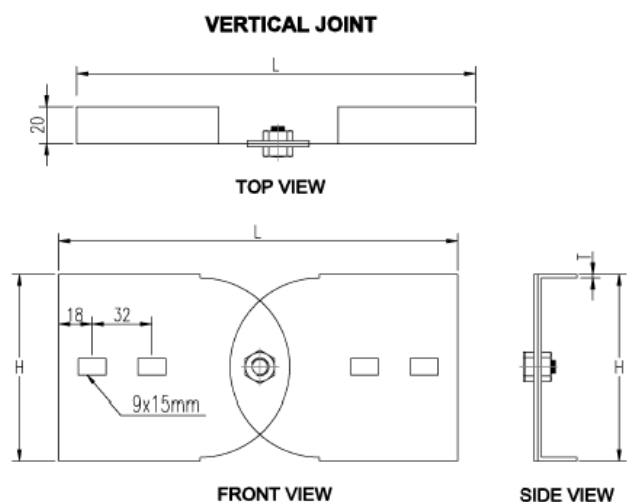
Extra Heavy Duty			
Width (W)	Height (H)	W1	Thickness
150	175-200	100	2.0
300	175-200	100	2.0
450	175-200	100	2.0
600	175-200	100	2.0
700	175-200	100	2.0
900	175-200	100	2.0
1000	175-200	100	2.0



Straight Joint			
Height Ladder	Height (H)	Length (L)	Thickness
75	70	150	1.5-2.0
100	94	150	1.5-2.0
125	120	190	2.0
150	144	190	2.0
175	170	190	2.0
200	194	210	2.0

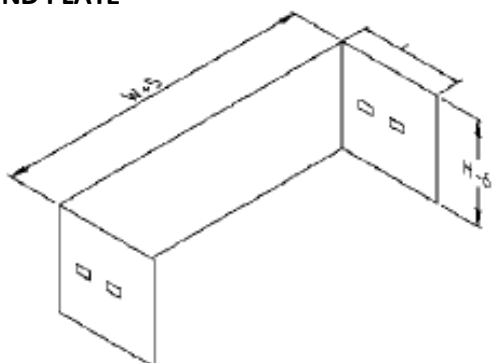


Horizontal Joint			
Height Ladder	Height (H)	Length (L)	Thickness
75	70	190	1.5-2.0
100	94	190	1.5-2.0
125	120	210	2.0
150	144	210	2.0
175	170	210	2.0
200	194	250	2.0

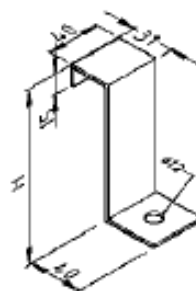


Vertical Joint			
Height Ladder	Height (H)	Length (L)	Thickness
75	70	190	1.5-2.0
100	94	210	1.5-2.0
125	120	250	2.0
150	144	290	2.0
175	170	290	2.0
200	194	290	2.0

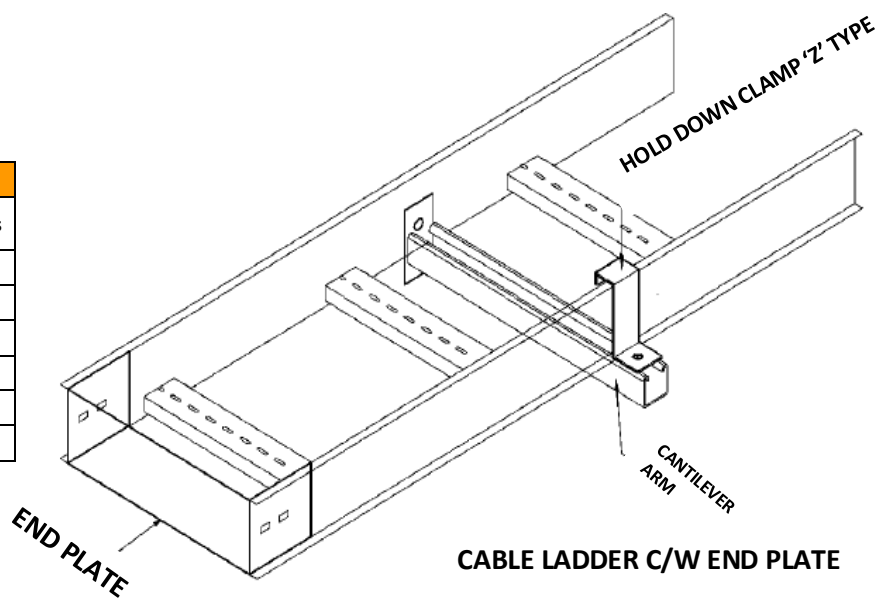
END PLATE



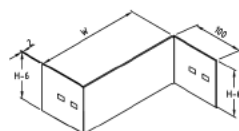
HOLD DOWN CLAMP 'Z' TYPE



End Plate			
Width (W)	Height (H)	Length (L)	Thickness
150	75-200	100	1.5-2.0
100	75-200	100	1.5-2.0
450	75-200	100	2.0
600	75-200	100	2.0
750	75-200	100	2.0
900	75-200	100	2.0



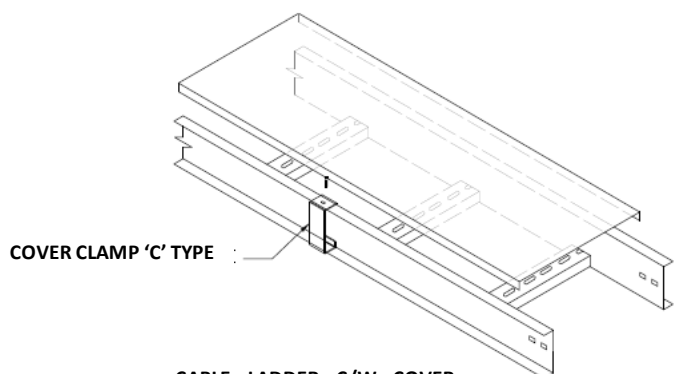
CABLE LADDER C/W END PLATE



OFFSET PLATE

Offset Plate			
Width (W)	Height (H)	Length (L)	Thickness
150	75-200	100	1.5-2.0
100	75-200	100	1.5-2.0
450	75-200	100	2.0
600	75-200	100	2.0
750	75-200	100	2.0
900	75-200	100	2.0

CABLE LADDER C/W OFFSET PLATE



COVER CLAMP 'C' TYPE

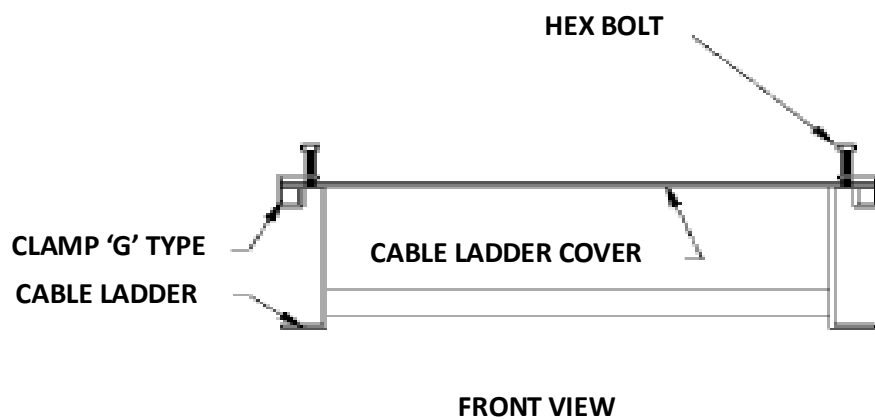
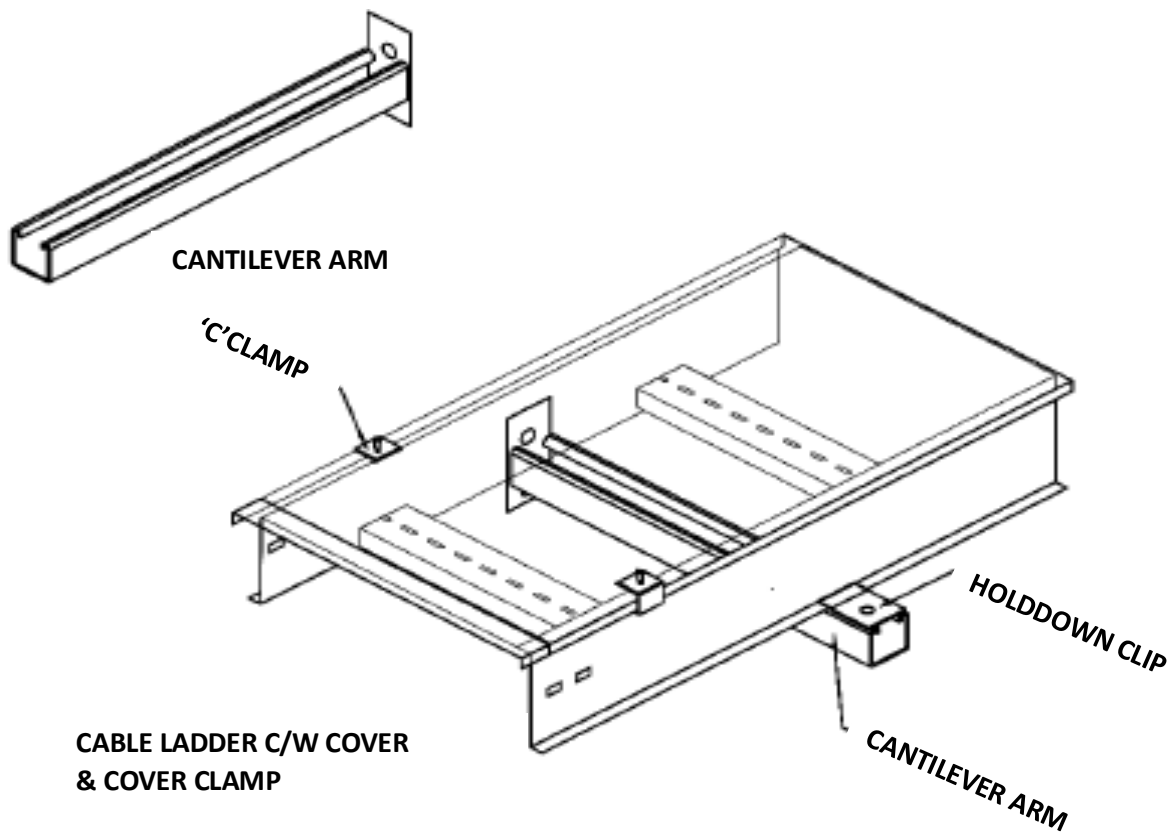


COVER CLAMP 'C' TYPE

CABLE LADDER C/W COVER, CLAMP & BOLT

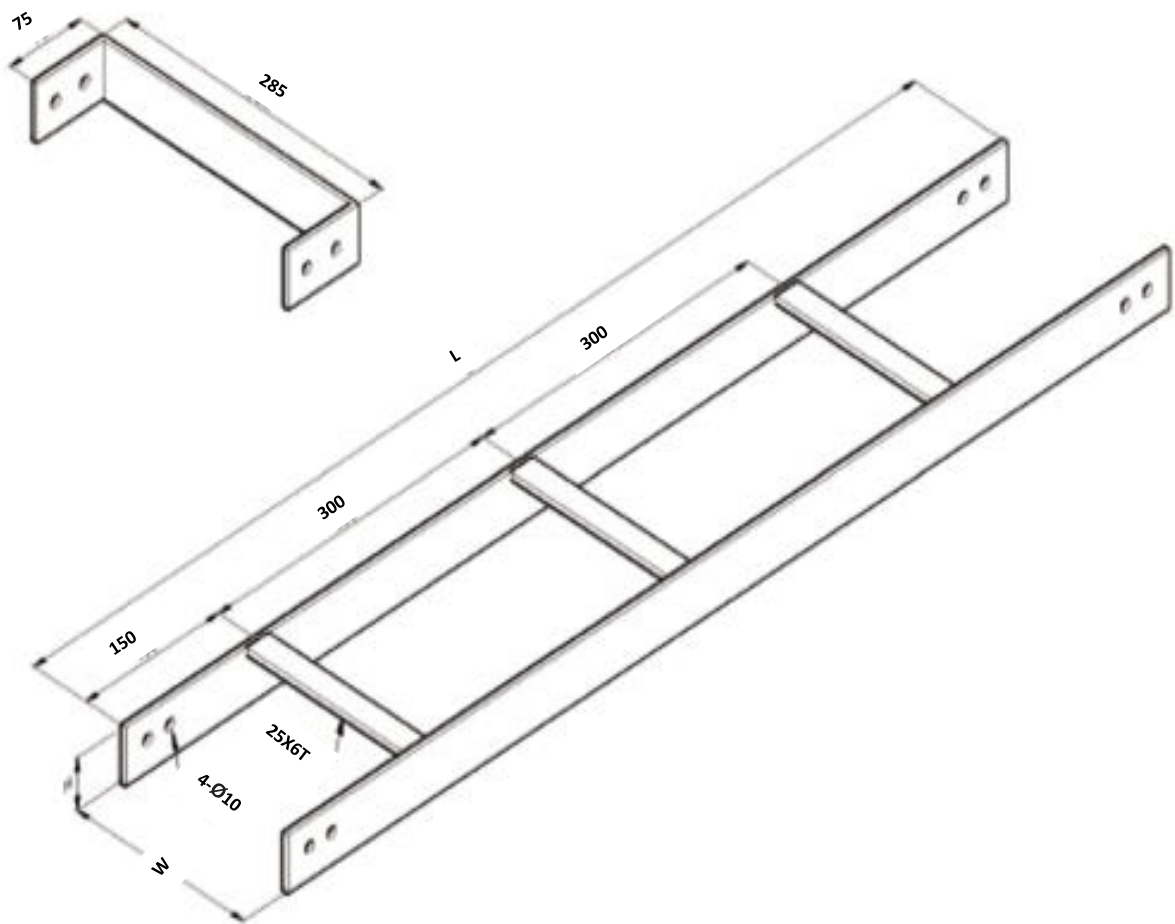
CABLE LADDER

In the interest of continuous improvements, SMARTr International Pte Ltd reserves the right without prior notice to alter the design and specification of their product.

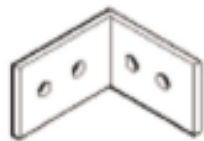
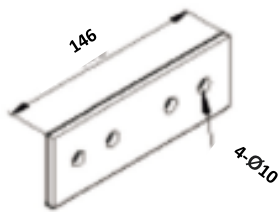


CABLE LADDER

In the interest of continuous improvements, SMART International Pte Ltd reserves the right without prior notice to alter the design and specification of their product.



Flat Bar Ladder			
Width (W)	Height (H)	Length (L)	Thickness
150	32-50	2440-3000	1.5-2.0
300	32-50	2440-3000	1.5-2.0
450	32-50	2440-3000	2.0
600	32-50	2440-3000	2.0
750	32-50	2440-3000	2.0
900	32-50	2440-3000	2.0



Typical Cable Ladder Fitting Installation

